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SEQUENCE OF PLUMAGES; ILLUSTRATED BY THE
MYRTLE WARBLER (*DENDROICA CORONATA*)
AND THE YELLOW-BREASTED CHAT
(*ICTERIA VIRENS*).

BY JONATHAN DWIGHT JR., M. D.

Plate III.

THE young birds figured on the accompanying plate illustrate a plumage that is common, not only to all North American Warblers, but to many other species of birds at the time of leaving the nest. It is but one stage in a series, and by tracing the development of successive plumages in the two species before us, we shall be able to grasp the idea of sequence, which underlies a true understanding of the relation plumages bear to each other.

There is a downy stage antecedent to the one figured. The young of the Myrtle Warbler (*Dendroica coronata*) while in the nest are scantily clothed with downy filaments, the fore-runners of true feathers, which grow from definite parts of the feather tracts. These are rapidly displaced by new feathers, to the tips of which they adhere for some time. This second stage, generally known as the 'first' or 'nestling' plumage, in the case of the Myrtle Warbler, happens to bear a strong superficial resemblance to that of the adult Pine Finch (*Spinus pinus*), which is heightened by the spray of evergreen on which the artist has posed the bird. The plumage of all young birds is, however, always weak

and soft at this stage, even the flight-feathers being less compactly rounded out terminally and deficient in pigment as compared with those of adults.

Within a few weeks, the plumage of the third stage, commonly known as the 'autumnal,' has replaced that of the second, which is in most species quite evanescent. The flight-feathers, however, are retained throughout the following winter and summer and are not renewed until the first postnuptial molt occurs, about a year after the birds have left the nest. The primaries, their upper coverts, the secondaries (usually the tertaries), the alulæ, and the rectrices are the only feathers retained of the 'first' plumage. The body feathers assumed resemble closely in structure and pattern those of the adult at the same season, and are worn during the winter until the end of March or April, when together with the wing-coverts they are renewed by a prenuptial molt, young and old becoming indistinguishable except by the worn, dingy wings and tail of the young bird.

The young bird has now reached a fourth stage, the plumage of the first breeding season, which in the Myrtle Warbler is made up of parts of three, — the flight-feathers, matured in the second stage, a few of the third stage, retained chiefly on the posterior parts of the body, and the new feathers assumed in spring.

At the end of the breeding season, the first nuptial, a complete postnuptial molt occurs which renders old and young indistinguishable, adults entering a fifth stage separable from the third chiefly by the blacker wings and tail, and brighter wing edgings, a difference that holds good for a twelvemonth, although it is not infallible and cannot always be made out. The fifth stage of plumage is worn until the following spring when the prenuptial molt occurs, involving only the body plumage and wing-coverts, as in the young bird.

A sixth stage, the adult breeding plumage, is the last one recognizable in the Myrtle Warbler, although it is well to bear in mind that a seventh, corresponding to winter plumage, and an eighth, corresponding to summer plumage, occurs, and so on until the death of the bird. Fortunately this species passes both winter and summer mostly within the borders of the United States so that I have been able to examine large numbers of specimens

taken every month in the year. The sequence of plumages is beautifully shown, and it is time it should be more widely recognized as a concrete fact.

The Yellow-breasted Chat (*Icteria virens*) is in some respects apparently unique among our Warblers. There is the first or downy stage, and the second, which is the one figured on the plate. The yellow spots represent the coming feathers of the third stage, the autumnal or winter plumage. Unlike the Myrtle Warbler, a complete molt, judging from the few specimens available, takes place, including the wings and the tail. No other Warbler of nearly forty species examined exhibits this peculiarity, although it is common enough in other families. This plumage assumed is practically indistinguishable from that of the adult, the black of the lores and suborbital region being as a rule less intense. It is worn without molt throughout the following winter and summer.

Consequently the fourth stage of plumage is simply the third plus a certain amount of inconspicuous wear.

The fifth stage follows the postnuptial molt, and the sixth is the fifth modified by molt. All of these stages may not be traced in all individuals, for the depth of the black of the lores is a variable and slender character, but it will be observed that the sequence of plumages obtains even when we cannot distinguish with certainty one from another.

The lesson to be learned from these two species is a valuable one, and many other species teach the same thing, namely, that plumages succeed each other in definite sequence, those of young birds overlapping in their development. To number the different stages consecutively has obvious disadvantages, and the terms now in common use are inexact, so that some new scheme should be devised to meet the exigencies of the case. As a solution of the difficulty, I offer the following names which conform, so far as is compatible with clearness, to every-day usage already sanctioned.

1. *Natal Down.* This is a first stage, no matter whether the covering of the young bird in the nest be downy or hairy, scanty or abundant, evanescent or persistent.

2. *Juvenal Plumage.* The name I propose as a substitute for 'first' or 'nestling' plumage is definite and suggestive of the

stage it represents, and may not be confused with the 'first winter' and the 'first nuptial' plumages, which seem to be fitting antitheses to 'adult winter' and 'adult nuptial.' At all events, *juvenile* marks a second stage, which is ill suited by the adjective 'first.' It is doffed by a postjuvenile molt.

3. *First Winter Plumage.* In this third stage feathers of adult structure are first assumed, the wings and tail of the juvenile plumage being retained in the majority of our species. It is the 'autumnal' plumage.

4. *First Nuptial Plumage.* This is the breeding dress of young or 'immature' birds and it may be merely the first winter plumage plus wear, or it may be wholly or in part acquired by a prenuptial molt which very rarely includes the flight-feathers, although the tail may be renewed when the wings are not.

5. *Adult (or Second) Winter Plumage.* A complete molt always follows the breeding season and distinctions between young and old birds usually vanish at this time, unless they have done so earlier. In most species, the differences between first and second (adult) winter plumages are inconsiderable, in some the plumage differs widely and several molts occur before the young bird acquires full adult dress.

6. *Adult (or Second) Nuptial Plumage.* This may be acquired every year in exactly the same way as the first nuptial, but there are some species that, after one prenuptial molt, undergo only the postnuptial in succeeding years.

There are many species in which these six plumages or stages may be clearly recognized,—usually less than six can be made out, and very rarely more. 'Third Winter' and 'Third Nuptial' will indicate later plumages, but 'adult' may naturally be substituted as soon as differences between young and old are obliterated.

My scheme, with proper modifications for certain groups of birds, will apply to all North American species, and, with a clear understanding of the process of molt, will explain the puzzling combinations of plumage that are as yet unsolved.

A FAMILY OF NESTLINGS.

BY D. E. OWEN.

OBSERVERS who have watched the growth of nestlings, from the hatching of the eggs to the abandonment of the nest by the young birds, often have been struck by the rapidity of the development witnessed; but, owing to the difficulty of obtaining quantitative data, exact information on this branch of bird study is meagre. In order to formulate an accurate record of the growth of a nestling, it is necessary to weigh the bird, at stated intervals, for as long a period as possible. This operation, it is needless to say, bristles with embarrassments. The unfavorable conditions for careful manipulation of the balance that obtain in field and thicket, especially during wet or windy weather, taken in conjunction with the inaccessibility of many nests and the inconvenient situation of most, render the study of ornithology, along such experimental lines, a pursuit characterized by trial and disappointment. Occasionally, however, a peculiarly favorable opportunity — such as the one about to be described — enables the observer to obtain facts of sufficient value to justify the labor involved in the research.

Early in June, 1898, the writer of these notes built a small camp at Saco Ferry, Maine. The building was placed over an old cellar, a portion of which only was utilized, the remainder, which lay in the rear of the camp, being left uncovered as a sort of sunken back-yard. Into this grass-grown excavation the refuse building materials had been thrown, and it was while we were clearing away the rubbish that a nest of a Song Sparrow (*Melospiza fasciata*) was discovered, snugly ensconced beneath a half-buried brick that protruded from the sloping wall of the ruined cellar. The nest contained several eggs which were increased in a few days to the full complement of five. On the 14th of July, four of the eggs hatched, and at our morning call the next day, we were confronted by five gaping red mouths, accentuated by big black eyes, and barely supported by five feverish, naked little bodies; and when, by means of a teaspoon, properly warmed, we had removed one of the birds for more minute inspection, we were alternately amused and stricken with concern, as the flabby

youngster strove to poise himself and lift his heavy head for the expected morsel, only to collapse, ignominiously, into a panting heap.

We had provided the camp with a balance, sensitive to one-tenth of a gram, and conveniences for weighing in the shape of sundry pill-boxes for confining the birds. To this apparatus we bore our infant of the teaspoon and found that he tipped the scale-pan at two and nine-tenths grams, or a little more than a tenth of an ounce. A cautious dab of carmine on the back would serve, we thought, by its bright hue, to distinguish our subject from his mates, and with this decoration we restored him to the nest. The next day we made discoveries that led us to modify our procedure. We found that, by chance, we had selected and marked for experiment the smallest bird in the brood, the runt, in brief,—the last bird, probably, to hatch. Moreover, the carmine had not proved an unqualified success, since the friction of the old birds' feathers and the scrubbing together of the young birds in their cramped quarters had nearly erased the generous daub originally bestowed. Apprehensive lest we might, some day, be unable to recognize the chosen bird, and desirous, also, of getting a better idea of development than the smallest bird might be expected to show, we decided to weigh the whole brood, at 12.30 p. m., daily, and take the average as the basis of our calculations and inferences. This system was put into practice at once and continued for six days, all the birds being weighed and a separate record being kept of the marked bird which, as it proved, we were always able to distinguish. The result may be tabulated as follows:

<i>Marked Bird.</i>		<i>Average of the Brood.</i>	
Date.	Weight.	Date.	Weight.
July 15.	2.9 gms.	July 16.	5.80 gms.
" 16.	4.5 "	" 17.	8.62 "
" 17.	7.2 "	" 18.	10.91 "
" 18.	9.0 "	" 19.	13.68 "
" 19.	12.6 "	" 20.	15.44 "
" 20.	14.1 "	" 21.	16.58 "
" 21.	16.0 "		

We were, in a measure, prepared for noteworthy results, but we were not prepared for the rapidity of growth that the table records. The family whose members increase in average weight 48% in twenty-four hours is a thriving one indeed; yet this is the rate of increase of the nestlings for July 16-17. The rate falls off after the latter date, becoming successively, 25%, 20%, 13%, and, finally, 7% in a day. Most interesting and suggestive are the figures showing the growth of the marked bird. It is a common impression that the runt of the brood has a bitter struggle for existence, being, by reason of inferior strength, largely at the mercy of its greedy fellows and crowded out of much-needed food in consequence. The results above noted would seem to imply that in well-regulated feathered households, at least, the doctrine of the survival of the fittest is warmly tempered by justice and mercy. At all events, the smallest Song Sparrow grew phenomenally. He picked up 55% in weight the second day of his life and save on a single day his increase never failed of being from 6% to 20% above the average! Beginning existence as the smallest of the lot and weighing, the second day, 1.3 grams less than the average, the marked bird grew, in a week, to weigh only half a gram, or about $\frac{1}{6}$ of an ounce less than the average, a record which bears testimony to abundant nourishment and a good digestion.

The rapid increase in weight of the nestlings needs no theorizing to account for it. The devotion of parent birds to their young and their industry in providing food are proverbial; but no one who has neglected to sit watch in hand, within range of a nest of five importunate, half-fledged youngsters can formulate an adequate conception of the fidelity with which birds discharge their parental duties. We made it a point to watch the nest of Song Sparrows in the old cellar from the camp window, whenever, through the day, it chanced to be convenient. With watch or clock before us and writing materials at hand, we sat at intervals of from fifteen minutes to an hour and a quarter at a time, accurately noting the visits of the parent birds. It was absorbing and exacting work. The old birds never flew directly to the nest, but approached it by stealthy stages, alighting now on a rock, now on the camp, again on a small bush. A rapid scrutiny of the cellar,

a quick flit, a scramble through the grass and a sudden disappearance, this was the usual programme. A few seconds later the grass blades would be separated very quietly, and the bird might be seen standing for a brief moment perfectly still; again the quick flight and the visit was over. The male was in the habit of alighting on a small bush, some twenty-five yards from the cellar, for a brief song, before renewing his search for the grubs and the insects which supplied the family larder; but the female never slackened her assiduity.

Back and forth, back and forth, from sunrise until sunset, the parent birds journeyed to and from the nest at the average rate, for the time we watched, of a visit by one of the birds every 4.75 minutes. On the whole, the feeding became more frequent as the nestlings grew. Thus in the two hours and thirteen minutes that we watched the nest, July 19, the birds made a total of twenty-six visits, or one every five minutes, while July 21, the average interval was 3.24 minutes. On the last named date we recorded the visits to the nest during some part of every hour but one between five o'clock in the morning and eight o'clock in the evening; and it is worthy of mention that the most frequent visits during this day were made between three and four o'clock in the afternoon when a thunder shower was passing over the locality. In the midst of a pouring rain the parent birds carried food to their brood every two minutes! Between seven and eight o'clock the calls were still at the rate of one in two and eight-tenths minutes; but we were unable by observation on this or any other day to discover any constant relation between the rate of feeding and the time of day.

It remains to explain why our observations on the Sparrows were not extended over a longer time. One week seems a brief period to follow the life-history of so interesting a family, but, unfortunately, the precocity of the members rendered a longer intimacy out of the question. The increase in weight that has been described was accompanied by other features of development. When the first weighing was done the young birds were weak and submitted with the passive philosophy born of innocence and inability; but the operation was not long to remain so easy. By July 18, the big eyes, which up to this time had

been covered with a thin translucent film, began to open. With the awakening to things visible came a greater liveliness and a tendency to be afraid which found voice, the following day, in loud chirps of alarm. These gave place, July 20, to genuine squawks and July 21, when we took the brood from the nest for the usual weighing the remonstrance was so boisterous as to summon the old birds which hovered about, much disturbed, until the experiment had been concluded. Finally, on the 22nd of July, we found the nestlings too lively to be handled and in our efforts to capture the lot we lost one altogether. Search as we might, we could discover no trace of the missing bird which, but a moment before, had been standing on the grass close to the nest. Misgivings consumed us for the remainder of the day; but we were destined to be reassured. On the following day, the young birds, now fully fledged, and able to fly a few feet, one by one left the nest and were led by the parents to a clump of weeds and bushes a few yards away. It was the final surprise of our week's observations to see the vigor with which the young birds followed the old birds, by easy stages, across the field, now running in the grass, now essaying a miniature flight. Within an hour these Song Sparrows of a week had justified the arduous attentions of the parent birds by removing, one by one, to the clump of small growth, to which, no doubt, the nestling lost the previous day had been conducted. For a day or two an occasional familiar chirp from the weeds assured us that the family was still intact; but we saw little more of either old or young.

ON SOME GENERA AND SPECIES.

BY D. G. ELLIOT, F. R. S. E.

IN MY little book on the 'Wild Fowl,' I gave some reasons why, in my opinion, the genus *Olor* of Wagler, *Isis*, 1832, p. 1234, should not be employed in preference to *Cygnus* Bechstein, *Orn. Taschenb.*, Vol. II, p. 404 (1803). In order to bring this question to the attention of the Committee of Nomenclature, some of whose members probably have not read what I have written, I propose to consider *Olor* as diagnosed by Wagler, and afterwards by Stejneger (Proc. U. S. Nat. Mus., 1882, p. 174), and show what seems to me, the entire insufficiency of the generic values of the characters advanced by these writers, and also that they are by no means in accord as to which of these should be selected to represent the genus.

Wagler divided the Swans into three genera, *Cygnus*, *Olor* and *Chenopis*. With the last, containing the Black Swan, I have at present nothing to do. *Cygnus* is diagnosed as follows: "Aeussere Merkmale dieser Sippe bestechen in dem Höcker von der Stirn und in dem Daseyn der Nagelkuppe am Oberkiefer." In this genus he placed the Mute Swan, *Cygnus gibbus* Bechst. = *C. olor* Gmel. By the above it will be seen that the characters relied upon as generic are the knob at the base of the bill, and the nail on the tip. *Olor* contains the rest of the White Swans, omitting only *columbianus* Ord. The diagnosis for this is as follows; "Der Oberkiefer ohne Nagelhuppe; die Stirn ohne Höcker:" Thus the presence or absence of the knob and nail on the bill are the only characters. In some remarks after the species he makes certain comparisons of the anatomy, such as the windpipe, muscles of the crop (Magen), etc., but the characters for the genera are as quoted above.

Stejneger (l. c.) has quite another diagnosis, and not only rejects all the characters relied upon by Wagler, but actually employs as a specific character the chief one, the knob (Höcker) given by Wagler to distinguish his two genera.

For facility of comparison I here give Stejneger's definition of

Cygnus and *Olor* in parallel columns, and it will be seen how hard pushed he was to find any lines of separation between them.

OLOR.

Predominant color of the adults white.

Young with downy or feathered lores, the down on the sides of the bill terminating far back of the nostrils, and forming very distinct loral antiae.

Tertials and scapulars normal, not crisp.

Tail longer than the middle toe with claw, rounded.

Inner webs of outer three primaries and outer webs of the second, third, and fourth sinuated. Webs of the feet not scalloped.

CYGNUS.

Predominant color of the adults white.

Young with downy or feathered lores, the down on the sides of the bill terminating far back of the nostrils, and not forming distinct loral antiae.

Tertials and scapulars normal, not crisp.

Tail longer than the middle toe with claw, cuneate.

Inner webs of outer three primaries and outer webs of second, third, and fourth sinuated. Webs of the feet straight, not scalloped.

The mountain has indeed labored and brought forth a mouse. Did any one ever before see so little produced from so much? The above diagnoses are absolutely identical save in two particulars, neither of which can be deemed as presenting *generic* characters at all, or if they should be so mercifully regarded by some compassionate writer, it could be at best only to permit them to create a very doubtful status as subgenera. It will be observed that the only characters given by Wagler, the knob and nail on the bill, and upon which he relied to establish *his* genera, are by Stejneger entirely ignored, for the reason that will be shown later on, and two others set up in their places. And what are these, and where does he look for the chief one? In the adult, or even in the immature bird? No, but in the downy young. When the newly hatched bird is devoid of feathers he finds a *generic* character upon the outlines of the down that in a few days will disappear and never be seen again throughout the bird's existence! This character (?) I have stated in the 'Wild Fowl,' to be "an adolescent, evanescent, and unreliable distinction, one not possessed by the adults, and which if recognized would place the young in one genus, the adults in another." It is difficult to

imagine that any one would dream of offering diagnoses like those given above for establishing genera, unless he was imbued with a determination to carry out his purpose at all hazards. Wagler's characters were far better, but they have been rejected by ornithologists as unworthy of being considered generic for over fifty years, and this fact may have induced Mr. Stejneger to look for others. But his genera are not those as defined by Wagler, the only similitude being that Stejneger has kept the same species together. Wagler's characters were taken from adult birds, where generic distinctions if they exist are permanent, and remain as long as the bird lives, and not from that incipient stage of adolescent plumage that a few fleeting hours causes to disappear. As well found a genus (and indeed with more reason) for the young of the Spoonbill with its narrow pointed bill, and another for the adult with its spatulate maxilla, for here is a wide difference, but the first is only a temporary condition, like the down on the cygnets, the latter a permanent character.

I have said that Stejneger rejected Wagler's first named character, the 'knob,' for a reason, and this appears in the key of the species of *Cygnus* (p. 189), where it is employed in a specific sense as indicating the divisions in which he separates what he gives as the distinct species of that genus, but it is nowhere employed in his paper as a generic character, as Wagler gave it. Thus, in the synopsis of the species, Stejneger divides them as "a¹, culmen with a knob at the base; a², culmen without a knob," this last, by the way, being Wagler's chief character for *Olor*.

As to the rounded or cuneate tails as *lone* characters, the other being of no value, it is hardly necessary to discuss them as of sufficient importance to establish a genus. It will thus be seen that Wagler's genus *Olor*, founded upon characters that were merely non-existent when compared with those he gave for *Cygnus*, having been rejected by all ornithologists for more than fifty years, can hardly with reason be resurrected for such insufficient and unreliable reasons as those advanced by Stejneger; and the fact remains, and many ornithologists have always been convinced of it, that there does not exist any character that can properly be termed generic, to separate the known species of

White Swans. It is, therefore, to be hoped that the Committee, after due consideration of the above presentation of the case, may decide to relegate *Olor* to its true position of a synonym, and reinstate *Cygnus* as the proper genus for our Swans.

The genus EXANTHEMOPS, instituted by me in 1868 for *Anser rossi* Cassin, has, according to the report in the last number of 'The Auk,' been accepted by the Committee on Nomenclature as a subgenus. The reasons which influenced this decision are not given, yet it would be interesting to learn what they were. Ross's Goose is a rare bird, comparatively speaking, and few collections, even those of great museums, possess more than two or three examples, and opinions founded upon such scant material are very apt to be misleading if characters fully developed are only to be best appreciated in the adult. Those on which I relied when founding the genus were the following: the wart-like excrescences, which increase in size and number as the bird advances in years, until they completely cover the base of the bill, and extend nearly to the nostril; the absence of gap at the commissure, so conspicuous a feature in the bills of all other Snow Geese, no black space visible, also a clearly discernible feature in the species of *Chen*, and hardly any beveling present and consequent absence of the grinning expression, so remarkable a feature in its allies. Now it seems to me that these are structural features not found in any other species of Goose, and entitle their possessor to a distinct generic rank. If one takes the excrescences on the bill as the sole character as to what constitutes the genus and forms his opinion solely upon dried skins, he is very apt to reject it as unfounded, because these peculiar 'warts' dry up to a great extent, indeed in some cases almost disappear after death and leave but little evidence of their previous size or of the extent of bill they covered. Hearne, who was the first observer to record the appearance of this bird in life, says the bill "at the base is studded round with little knobs about the size of peas, but more remarkably so in the male." Voy. North. Ocean, p. 442 (1795). This is a character similar to those on which the genera *Plectropterus* *Cairina*, *Sarcidiornis* and others are established and accepted. Dried skins do not exhibit differences that are mainly

fleshy, as they appear in life, and one is apt to go astray when an opinion is formed upon them as to their generic value, for they are much less pronounced than they are when the animal is alive. These caruncles, unknown in any other Goose, and the structure of the bill very unlike that of other species in the subfamily, are, I maintain, sufficiently divergent structural characters to establish a distinct genus.

In the 'Shore Birds,' I gave the name that should be employed for the Western Willet as *Sympheeria s. speculifera* Pucheran, arriving at this conclusion by an independent investigation, having forgotten Dr. Allen's very clear and conclusive evidence on this subject published seven years previously (Auk, 1888, p. 423). Had I remembered this, it would have saved me considerable work. This matter, so far as outsiders are aware, has never been acted upon by the Committee; at least, there has been no verdict announced, and as the Check-List is now in a fair way of being presented in a correct and proper shape, even a matter of this kind should not be permitted to slumber longer. In an article published in the *Rev. et Mag. de Zool.*, 2nd Series, 1851, p. 369, entitled 'Études sur les types peu connus du Musée de Paris,' Dr. Pucheran describes as *Totanus speculiferus* the bird mentioned by Cuvier, *Règne Anim.*, 2d edit., Vol. I, p. 534, in a note, as follows: "Ajoutez au chevaliers ordinaires, *Tot. speculiferus*, assez semblable au *semipalmatus*, mais plus haut sur jambes, à bec plus long et à pieds ordinaires." Pucheran gives a detailed description of this specimen, which is not necessary to reproduce here, merely stating that it portrays Mr. Brewster's *inornata* in winter. He sums up the matter as follows: "Cette espèce se distingue, par la longueur de son bec, du *Totanus semipalmatus*, Tem. Les dimensions du seul individu que possède la Musée de Paris sont les suivantes: Longueur du bout du bec à l'extrémité de la queue (prise directement, le bec étant fortement tourné à droite), 33 cent.—*Id.* de la queue (mesurée en dessous), 8 cent.—*Id.* du tarse, 75 millim.—*Id.* du doigt médius (l'ongle y compris), 41 millim.—*Id.* du bec (en suivant la courbure), 66 millim.

In the opinion of several ornithologists, this bird is the same as Mr. Brewster's subspecies, and that our Check-List is wrong in containing the name of *inornata*. Fortunately, as the type

described by Pucheran is in the Museum of Paris, it is a very easy matter to send some winter examples of the Western Willet to Dr. Oustalet and have a comparison made and the question settled beyond a doubt. I suggest to the Committee that this be done.

In the same number of 'The Auk' the name for our Northern Turkey has been correctly given as *M. fera* Vieill., *Nouv. Dict.*, 1817, p. 447, and not *M. sylvestris* Vieill. as given by me in 'Game Birds.' It may be interesting to state how I came to adopt that name, as Vieillot never described any Turkey as *sylvestris*. In the MS. of the book just mentioned, I had originally placed our northern bird under the name of *gallopavo* Linn., and it was only as the copy was being put in type that, acquiescing in the views of some of my colleagues, although fully convinced that their case was not proven, any more than my view could be proved, I adopted *gallopavo* for the Mexican bird. It was then necessary to ascertain what name Vieillot had given the northern bird. There was no copy of the 'Nouv. Dict.' available, and I could not delay the printer until I should be able to consult it, so perforce, contrary to my established custom in such cases, I accepted the citation given in B. M. Cat. Birds, XXII, p. 389, as correct, and was thus led astray.

As to the names adopted by the Committee, I regret that I cannot accept them. There is no evidence that I am aware of, that conclusively proves that *fera* and *gallopavo* as now understood, intergrade, and until that is ascertained to be a fact I prefer to consider them as distinct species, with *osceola* a sub-species of *fera*. With regard to *intermedia* (*elliotti*) of my book (l. cit.), the more I investigate that bird the more I am convinced that it should be accorded specific rank. Beside the different coloring of the male, that of the female agrees with or resembles none of the females of any other known Turkey. Like many other species of birds (it would be easy to give examples) the main and important specific differences are to be found in the female, and if the male was exactly like *fera*, these characters would be sufficient for separation. The gray tips to the feathers of the upper surface making almost continuous bars across the body, and the buff ones performing a similar service on the

under parts is a quite unique character. I would therefore designate the Turkeys as follows:

Meleagris fera. Northern Turkey. Pennsylvania to Florida, west to Wisconsin and Texas.

Meleagris fera osceola. Florida.

Meleagris intermedia. Southern Texas; Eastern Mexico below 2000 feet.

Meleagris gallopavo. Western Texas to Arizona. Tablelands of Mexico.

Under these names the Turkeys will appear in the third edition of 'Game Birds.'

SOME PARASITES OF BIRDS.

BY VERNON L. KELLOGG, PROFESSOR OF ENTOMOLOGY, LELAND
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ALL collectors of birds have noticed, and some have been made uncomfortable by, certain small flat, wingless, quickly-running insects which infest, in varying degree of abundance, the outside of birds' bodies. These insects are known as Mallophaga and are of such peculiar and unusual structural condition, differing so markedly from any other insects, that they have been constituted an independent order of insects, although in number of species they are insignificant compared with the better known insectean orders.

Yet small as is the group, the number of known species in it, a thousand, approximately, may seem surprisingly large to those unacquainted with the systematic exploitation of the order.

The Mallophaga are external, wingless parasites of birds and mammals which feed exclusively on the feathers, hairs and dermal scales of their hosts. They are not lice, if by lice be meant those better known Hemipterous parasites which with piercing beak thrust into the flesh of the host, suck its blood. The Mallophaga have mouth parts fitted for biting and chewing, with

strong biting and masticatory mandibles. The order includes four families, comprising 21 genera. Of these, two families, represented each by a single genus, and including altogether not more than 50 species, are restricted to mammals, while the other two families with their numerous genera are found on birds alone.

To ornithologists the Mallophaga will have no special interest except as parasites of birds. That is, their peculiarities of structure or of development, or their systematic isolation among insects will be of but secondary interest compared to the facts of their parasitic relations to their hosts, the birds. And, indeed they are those facts about the Mallophaga which are, perhaps, of first importance to entomologists. For it is because of their parasitic habits that they have come to depart widely from their racial type.

I shall endeavor, then, to state briefly some of the ascertained facts regarding the relations of the Mallophaga to their hosts, and to indicate certain interesting moot points, to whose settlement the aid of ornithologists needs to be invoked.

Nearly one thousand species of Mallophaga have been described by three or four European entomologists from European and Asiatic birds. In this country 262 species of Mallophaga have been recorded from 257 species of North American birds. Of these species 105 have been determined to be identical with species previously described from birds of Europe or other foreign country, while the remaining 157 have been described as new species. An important problem is immediately before us: how come Mallophagan species to be common to foreign and to American hosts? First, must be eliminated those hosts common to the two continents either by reason of circum-polar range or importation. Then must be eliminated the few possible cases of the meeting on mid-ocean islands of related maritime birds of strong flight from the two continents. Finally there remains a large number of instances in which a Mallophagan species is common to American and foreign hosts of distinct species, and distinct genera frequently, who have no possible chance for that contact which might allow the parasites to migrate directly from one host to the other. This problem of

distribution is also presented to us in a less striking, perhaps, but no less real phase among the hosts of our own continent. A Mallophagan species is by no means certainly limited to one American host species. Indeed a majority of North American Mallophagan species have been recorded from two or more American host species. How does this condition come to exist?

We have to do with a wingless parasite but a parasite with good legs. Our parasites can migrate from host to host when this migration can be performed on foot. But as a matter of fact this migration does not take place unless the host bodies are close together or in actual contact. Such actual contact takes place between male and female and between old and young. Thus is explained the perpetuity of the parasites upon a single host species. Among gregarious birds the parasites may migrate from individual to individual of the same species, thus breaking up too much close breeding. But several species of birds of gregarious habits may roost or perch together: so the parasite may spread among several Gull species or Duck species or Alcine species, conditions which actually exist as shown by our records of occurrence. And there may be other rare opportunities for migration from host species to distinct host species, as in cases of hybridization, or where the Mallophaga might be carried by winged parasites of birds, like the Hippoboscidae. After all, however, the majority of instances in which a parasitic species is common to two or more host species or host genera cannot be so simply explained. The instances in which actual contact and hence direct migration is possible are few.

There are certain data at hand which should be known to anyone attempting a solution of this problem in distribution. Most important is this fact: where a single Mallophagan species is recorded from two or more North American host species, the host species are, in almost all cases, closely related. That is, the hosts may represent two or more species of a single genus, or, as less frequently is the case, of two or more allied genera. Only in a few cases do we find a parasite common to genera representing different families of birds. Similarly, in those numerous instances of commonness of parasite to European and American hosts, the hosts are always or nearly always allied forms. As

for example, the case of the Mallophagan species *Nirmus signatus* and *Nirmus pileus* found in Europe on *Recurvirostra avocetta* and in America on *Recurvirostra americana*. The instances in which the parasites are common to hosts of different genera in America and Europe are not infrequent but the genera are, in almost all cases, allied ones.

I have suggested elsewhere the only explanation of this problem in the distribution of the Mallophaga which seems to me possible, and that is that the Mallophagan species common to hosts of different species, in instances where all possibility of direct migration is precluded, have persisted unchanged from a host which was the common ancestor of the present distinct host species. The influences, climatic and geographic, which have resulted in effecting the founding of the new bird species have had no effect on the parasitic species. The food and environment of the parasite are essentially the same on one bird as on another. A paling of plumage, a shortening of legs, a development of crest feathers, or whatever new characters might be fostered and fixed by a change of environment of the host, resulting in the production of a new bird species, would have, apparently, no necessary influence on the parasite. Does some more probable explanation of the facts of distribution of these bird parasites suggest itself to any member of the A. O. U.?

It may be of interest to append a few notes regarding the relative abundance or rarity of the parasites on their hosts, and regarding the constancy or irregularity with which a specific parasite is found upon its special host. A host species may have several parasitic species infesting it; I have taken ten species of Mallophaga, representing six genera, from *Puffinus opisthomelas*, and twelve species representing five genera from *Fulica americana*. Or, the host species may have but one or two or three species of parasites, as is the case with the Ducks and Gulls. A parasitic species may be constant in its appearance on the individuals of its host, as with *Docophorus lari* Denny, almost certain to be found on any Gull shot, or it may be found on but few individuals of its host species, as with *Docophorus quadriceps* Kellogg, found rarely on *Fulica americana*. There may be many individuals of a parasitic species always present on

the body of its host, as with *Lipeurus celer* Kellogg of the Fulmars, of which parasite I have collected nearly one hundred specimens from a single bird, and which is always abundantly present on its host. Or the individuals may be few although the parasite is a constant one, *i. e.*, almost always to be found on any specimen of the host examined. *Trinoton luridum* Nitzsch of the Ducks is rarely numerous on its host although sure to be present on any Duck specimen examined.

With these scattered observations I close my paper, only hoping that some bird collectors may derive from these notes an interest in the Mallophaga sufficient to induce them to collect these parasites, as their collection can be made more conveniently by bird collectors than by entomologists. The preservation of the specimens is a simple matter. Drop all of the parasites obtained from a host individual (from a single bird, not bird species), into a vial of 85% alcohol, and label the vial with name of bird, locality, date and name of collector. I shall be glad to receive specimens to examine, determine and return, or, if permitted, to add to my collection.

THE PROTHONOTARY OR GOLDEN SWAMP WARBLER
(*PROTONOTARIA CITREA*) A COMMON SUMMER
RESIDENT OF SOUTHEASTERN

MINNESOTA.

Y. S. Roberts

WITH PHOTOGRAPHS FROM NATURE BY THE AUTHOR.

THE apology that I feel to be due for appearing before the Union¹ with a local paper of this kind, dealing as it does with a bird about which so much that is excellent has been written, is that the facts to be presented establish in no uncertain way a remarkable northward extension of the breeding range of a bird hitherto commonly regarded as of much more southern distribution.

¹This paper was read at a meeting of the American Ornithologists' Union held in Washington, Nov. 15, 1898.

Without delaying to define at length the general range of the Prothonotary Warbler it will suffice to recall to mind that it is commonly considered as breeding in abundance in the Mississippi Valley only as far north as southern Iowa and middle Illinois. Beyond this it is looked upon as merely a straggler. Ridgway, in 'Birds of Illinois,' says: "Breeding abundantly in willow swamps north to at least 40° in Illinois and contiguous States." Keyes and Williams in their 'Catalogue of Birds of Iowa' say: "Summer resident; not uncommon especially in the eastern part of the State." Records for northern Iowa and Wisconsin are infrequent and merely call attention to the capture of rare stragglers. Cook's 'Bird Migration in the Mississippi Valley' contains nothing more definite. The 'A. O. U. Check-List' for 1895 states, "Casually to New England, Ontario, and Minnesota." Dr. Hvoslef's capture of a single Prothonotary Warbler opposite the mouth of the Root River below La Crosse, August 16, 1874, though several times quoted as a Minnesota record belong properly to Wisconsin. Cantwell, in his 'List of the Birds of Minnesota,' published in the 'Ornithologist and Oölogist' for September, 1890, states, from information gathered from Johnson of Red Wing and Harrison of La Crescent: "Common along the Mississippi River in the South as at Red Wing and La Crescent; breeding at both places." In 'The Oölogist' for November, 1890, appeared a short article by Mr. Whit Harrison, of La Crescent, Houston County, Minnesota, calling attention to the Prothonotary Warbler as a regular summer resident in southeastern Minnesota. He did not at that time consider the bird common, and the article is chiefly devoted to an interesting account of some curious nesting sites selected by the species, to which reference will be made later in this paper. In 'Bulletin No. 4 of the Wilson Ornithological Chapter,' published at Oberlin, Ohio, January 15, 1895, there is a report of a nest of the Prothonotary Warbler, "taken in Goodhue County, Minnesota, June 13, 1893." In 'The Oölogist' for June, 1898, is an article by Mr. C. B. Johnson of Red Wing, Goodhue County, Minnesota, giving for the first time definite and conclusive testimony as to the regular and common occurrence of this Warbler at that locality, one hundred and fourteen miles by way of the Mississippi Valley from the southern boundary line

of Minnesota. The account is based on ten years' observations, and after giving a concise description of the nesting habits, nests and eggs, dates of arrival, etc., concludes with the statement: "It certainly should be classed as fairly common in suitable localities along the Mississippi River in southern Minnesota." This completes the literature of the subject.

The appearance of Mr. Johnson's article, offering as it did the attractive prospect of an invasion of the breeding haunts of so interesting and beautiful a bird as the Prothonotary Warbler, and in a locality so far from its ascribed range, determined the writer upon spending a week's vacation in exploring the Mississippi bottom-land in southeastern Minnesota instead of penetrating into the wilds of the Lake of the Woods region as had been planned. Leaving Minneapolis, June 20, 1898, accompanied by Mr. L. O. Dart of Litchfield, Minnesota, an earnest and competent student of birds, we began our investigations the following day at Red Wing, a point on the Mississippi River forty miles south of St. Paul. We were here very materially assisted by Mr. C. B. Johnson who kindly spent part of the first day with us and piloted us into the difficultly accessible haunts of the bird of which we were in search. So surprising were the results of the three days spent here that we decided to continue the trip down the river to the Iowa line in order to obtain a more comprehensive view of the distribution and numbers of the Warbler in question. The railroad follows closely the river bank all the way so that we were able to easily make satisfactory observations at many points. At La Crescent a day was spent and our observations were supplemented by comparisons with those of Mr. Harrison and Mr. Frank Harris, both of whom have interesting local collections of birds and eggs and have devoted no little attention to observing the birds of the immediate vicinity. Reno, six miles north of the Iowa line, was the most southerly point visited and found to be the most interesting place for field work. From this point the rugged and heavily wooded valleys of Crooked and Winnebago Creeks were explored for a distance of twelve to fifteen miles back from the Mississippi River, quite out onto the high rolling prairie region westward. The very heavily wooded Root River bottom was not visited, as Dr. Hvoslef of Lanesboro has given it



FIG. 1. NESTING PLACE OF PROTHONOTARY WARBLER.
Near Reno, Hamilton Co., Minn.



FIG. 2. PROTHONOTARY WARBLER. Nesting stump and characteristic environment.
Lower right-hand corner, nest and eggs exposed in situ. Near Redwing,
Goodhue Co., Minn.



considerable attention for years past. Immediately on our return to Minneapolis, Mr. Dart at my request went back to Hastings, a point on the River twenty miles below St. Paul, and twenty miles above Red Wing where we first saw the Prothonotary Warbler, and dropped down the river some miles in a boat to determine, if possible, the northernmost limit of distribution of the bird. In this he was fairly successful.

The bottomland of the Mississippi River, particularly from the entrance of the St. Croix River, twenty miles below St. Paul and one hundred and thirty-four miles from the Iowa line, is a broad expanse of low land three to six miles in width and enclosed between high, broken and picturesque bluffs three hundred to six hundred feet high. A portion of this low ground is open marsh and meadow land, but the greater part of it is covered with a dense growth of willow, cottonwood, aspen, box-elder and birch, and here and there are heavy forests of larger growth, with elm, maple, and butternut added, and a luxuriant growth of tangled woodbine, poison ivy, grape and other vines. The main channel of the river winds through this valley in great sweeping curves, first to one side and then far away to the foot of the bluff opposite. It is continually sending off side channels and false passages so that the entire bottomland is divided up into innumerable islands and irregular strips of land. This is particularly true of the six or eight miles lying between the head of Lake Pepin and Red Wing, and of the whole valley from La Crescent to the Iowa line. In early spring, with the first rise of the melting snow, and again during the 'June freshet,' a large part of this lowland is overflowed, often to a considerable depth, so that a boat can be run almost anywhere where the smaller undergrowth and vines do not block the way. Some portions of the bottomland are occasionally flooded quite throughout the year, and are dreary, desolate places indeed. The action of the ice in spring, combined with the effect of the floods, has resulted in the death of vast numbers of the smaller trees, particularly the willows which fringe thickly the river banks, the stagnant inlets, old channels, false passages and occasional island ponds. This grim feature of the landscape forces itself upon the attention almost everywhere and, desolate as it is, soon comes to have a peculiar interest and

charm for the bird-lover, for these flooded dead-timber areas are soon discovered to be the chosen homes of the very choicest of the feathered tribes frequenting these parts.

With this brief itinerary of our wanderings and general description of the topography of the country visited, the chief outcome of these investigations may be stated at once. At all points visited throughout this five hundred square miles of bottomland, the Prothonotary Warbler was found to be a common summer resident, and as we advanced southward toward the Iowa line it became one of the most frequent and noticeable of the birds. They were found only in the bottomland and apparently do not pass up the heavily wooded deep ravines of the tributary rivers and streams. Extensive examination throughout many miles of several of these seemingly suitable valleys revealed not a single bird of this species, and Dr. Hvoslef after years of observation in the Root River Valley, between Lanesboro and the Mississippi River, has never seen the bird thereabouts. At La Crescent and Red Wing, where some attention was given to the upland and bluffs, nothing was seen of these birds in such positions and, common as they were in the broad valley below, they would inevitably have been entirely overlooked had not their chosen haunts, to which they seemed to be so closely and persistently attached, been invaded. The most northern point to which they appeared to ascend in the valley was a short distance below Hastings (about four miles), where a single individual was seen by Mr. Dart, on July 4, 1898. This was about $44^{\circ} 45'$ north latitude, and one hundred and thirty miles from the Iowa line by the river valley, but only eighty-five miles in a direct southerly line. Thus this species is quite generally distributed over an area one hundred and thirty miles northwest and southeast and averaging three miles in width,—in all about five hundred square miles, which is divided, probably, about equally between Minnesota and Wisconsin. A very low estimate per mile would show that certainly several thousand Prothonotary Warblers pass the summer in this valley north of latitude $43^{\circ} 30'$, and that at least one half of this number rear their young on Minnesota soil. Except an indefinite record (probably a mistake in identity) for the Heron Lake region there is no account of the occurrence of this bird anywhere else in the State.

The narrow strip of Minnesota territory under consideration in this paper, together with the adjoining lowlands in Wisconsin, have of late years been given a tentative and rather indefinite position on faunal charts as a northward prolongation or tongue of the Carolinian Fauna. The facts here presented may perhaps render more positive such assignment of this low-lying and sheltered valley and reveal it as being possessed of an even more definite Carolinian character than supposed. The presence of the Prothonotary Warbler in such numbers suggested that other southern birds ought to be found, but in this we were disappointed with the two following exceptions. The Louisiana Water Thrush (*Seiurus motacilla*), not found as far north as Minneapolis, was present in small numbers at Red Wing and thence southward throughout the entire valley and in the neighboring wooded lowlands to the westward. This bird is probably generally distributed throughout the timbered areas of Southern Minnesota, reaching a limit at about $44^{\circ} 45'$ north latitude. Beyond this Grinnell's Water Thrush (*Seiurus noveboracensis notabilis*) is alone found. The other exception proved a most unexpected one. We found the Red-bellied Woodpecker (*Melanerpes carolinus*) permanently resident in the heavy timber of the bottomland in Houston County. Mr. Harrison had several specimens taken near the mouth of Root River, and assured us that they wintered in the great elm forest there found, he having seen them there in January. At Reno we shot a male Red-bellied, June 24, and saw and heard several others. They undoubtedly occur here regularly, and not so very infrequently, over a small area extending northward not to exceed twenty-five or thirty miles from the Iowa line, $43^{\circ} 30'$ north latitude. This bird is here reported from Minnesota for the first time and from a station many miles north of the usually assigned northernmost limit of its range in the Mississippi Valley. The 'A. O. U. Check-List' for 1895 says "Southern Michigan and Central Iowa."

A glance at the vegetation of the lower part of this valley may serve to further indicate its Carolinian trend. The black walnut, red mulberry, Kentucky coffee tree, and to a more limited extent, the shell bark hickory find a foothold here, and the woods of Houston County are full of the May apple (*Podophyllum peltatum*).

The poison ivy (*Rhus toxicodendron*) is here a climbing vine, while one hundred miles further north, it is but a low shrub. Small fruits, notably cherries, and a more considerable variety of grapes and apples than occur further north, are truly hardy under the shelter of the high bluffs; and the chestnut, flowering dogwood, and trumpet creeper, can be induced to grow in cultivation in similar situations. An apple tree of the St. Lawrence variety has been growing on the farm of Mr. Harris at La Crescent for over twenty-six years, and is now a veteran with trunk some eighteen inches in diameter.

Doubtless other forms of life would bear equally clear testimony in the same direction, but unfortunately, I am unable to call them to an accounting at this time.

It does not seem worth while to enter here upon an extended account of the habits of the Golden Swamp Warbler as observed in Minnesota, since it would be but a repetition of that which has already been so ably and satisfactorily chronicled by Mr. William Brewster, W. E. Loucks, and others. Suffice it to say that everywhere, with one curious exception, the birds were nesting in holes excavated by the ubiquitous Downy Woodpecker. Nowhere did we find inhabited nests placed in natural cavities as in crevices or crannies behind loose bark, but from evidence afforded by one or two old nests apparently of this species, such places are apparently sometimes used. Given a flooded area where the long since lifeless willows were standing gaunt and gray with unsteady and crumbling trunks among the other less decrepit forms and there the Prothonotaries were sure to be, often several pairs in a tract of only a few acres.

Not unfrequently small willow, maple, and birch stubs and the dead and rotting trunks of larger trees fringing the edge of the main river channel and marking the line of the heavy forest behind were the homes of many couples. Often these stumps were but mere shells four or five inches in diameter and projecting not more than three or four feet above the surface of the water. Quite commonly they were thoroughly water-soaked, the only dry thing about them being the pretty little nest with its foundation of green moss bearing on its top the frail structure of fine grass and bark. Occasionally the nests were placed higher



FIG. 3. NEST AND EGGS OF PROTHONOTARY WARBLER, exposed in situ. Houston Co., Minn.



FIG. 4. CHARACTERISTIC RESORT OF PROTHONOTARY WARBLER. Nesting stub in foreground. • Upper right-hand corner, male approaching nest. From life. Near Redwing, Minn.

up in dry situations and sometimes in large cottonwood and maple stumps, the latter being the places chosen when the birds frequented the heavier growing timber. About Reno, six miles from the Iowa line where the birds were particularly abundant, the sombre forest, here very heavy with muddy, oozy bottom and little underbrush, was much frequented by this bird and the forcible ringing chant of the male Prothonotary joined in the deep forest with the incessant bird chorus coming from myriads of American Redstarts, countless Vireos of several kinds, Wood Thrushes, and Catbirds, innumerable Rose-breasted Grosbeaks, an occasional Louisiana Water Thrush, and a varied assemblage of harsh-voiced Woodpeckers, with a perpetual undertone of small Flycatcher notes.

A singular departure from the natural nesting habits of the Prothonotary Warbler was observed and studied at La Crescent, and the facts are perhaps sufficiently interesting to warrant brief recital here. Goss in his 'Birds of Kansas,' and Harrison in the article in the 'Oölogist' above quoted, tell of finding this Warbler abandoning the woods, and selecting, after the fashion of the Bluebird and the House Wren, building sites about dwellings, bridges, and other structures. La Crosse and La Crescent lie on opposite sides of the Mississippi River, and an iron truss railroad bridge with long tressel work approaches connects them. Over this bridge there passes a never ceasing stream of railroad trains, and through the swinging draw a procession of boats day and night—a busy, noisy place, very unlike the peaceful calm and seclusion that reigns in the depths of the pathless and almost impenetrable expanse of wooded bottom land that stretches away on all sides. And yet here the usually shy and retiring Golden Swamp Warbler has forsaken its accustomed haunts so close at hand, and with unexpected daring and infinite pains has sought out and utilized places for rearing its young on and about this busy thoroughfare. Mr. Harrison, who for nineteen years has been draw-tender and engineer on this bridge, has long watched and encouraged this confiding trait, and has come to speak of these little companions in terms of endearment, and to look eagerly for their springtime return. He has from time to time, nailed up boxes and sections of hollow logs in seemingly most

impossible places, and they have year after year taken possession of them and built nests in them with great labor, and reared their young within a few feet of the thundering trains, clanking and creaking machinery of the draw, and escaping steam from the engine house high on the top of the draw in midstream. At the time of our visit, June 24, a pair were building a second nest in a cigar box nailed to a window casing of the engine room, carrying to this lofty, exposed position, great bunches of moss from the distant shore, with a sweeping wind blowing them hither and thither, and making the task a well-nigh impossible one. Lower down, just where the outer end of the draw came banging against the abutting pier, and not four feet from the rail, a female Prothonotary was sitting composedly on her nest, built in the bottom of a tin ventilator cap that had been knocked from a lamp box and fallen, open end up, down between the box and a girder, supporting a much used ladder. The little cup-like cap was four inches high, and three inches in diameter, and the birds had partly filled it with the usual green moss and fine grass. It contained the customary full first set of six eggs. (See Fig. 5.) Still another pair had a nest in a shallow cavity in a piece of slab wood, nailed to one of the tressel supports and close under the roadbed of the railroad.

The male of the pair engaged in building in the cigar box on the engine house window had, before the box was nailed up by Mr. Harrison, investigated the entire inside of the engine room, entering by the open door. Mr. Harrison thinks the male always selects the nesting place. This one first examined carefully into the merits as a building site of the tin drinking cup hanging against the wall and then spent some time going in and out of an old soft hat that reposed in a large pigeon hole in one corner of the room. He did not abandon this indoor quest until the box outside was offered him when he at once accepted the suggestion and was soon off for his waiting mate who, after a little earnest coaxing, accepted the tenement, and they at once went to work to furnish it,—no easy task, as already described. (See Fig. 6.)

It certainly seemed most strange after having spent most laborious days in making the acquaintance of this elegant little bird in its secluded natural haunts, to find it here in all the steam, smoke

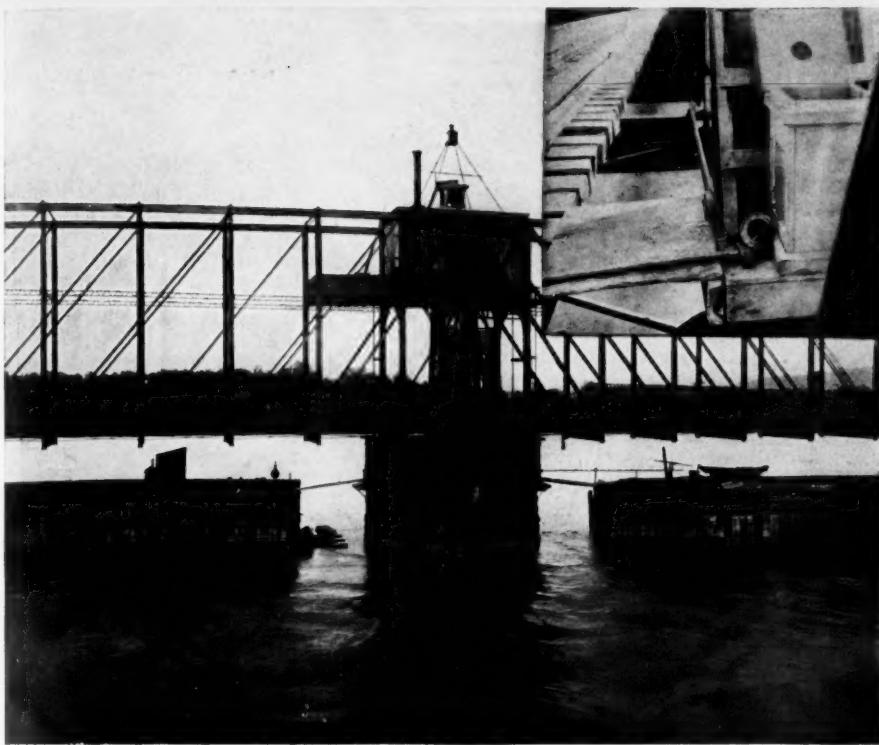


FIG. 5. NESTING PLACE OF PROTHONOTARY WARBLER in bridge over Mississippi River, opposite La Crescent, Minn. Upper right-hand figure, nest in the ventilator cap, exposed for photographing.

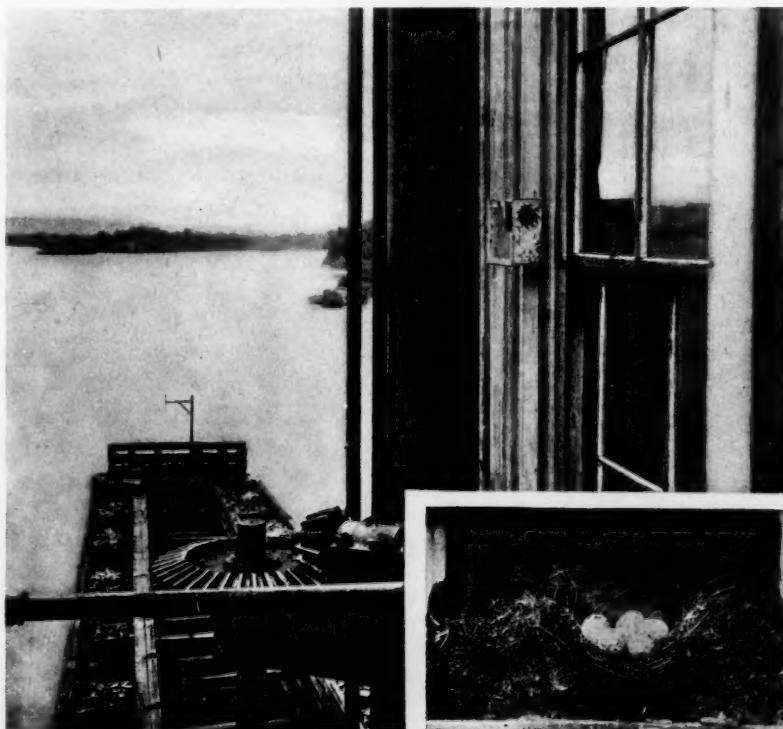


FIG. 6. PROTHONOTARY WARBLER. Nest in cigar box on window casing of engine house, on top of bridge. Lower figure, nest and eggs exposed.



and noise of this exposed place. But they seemed not at all disturbed, and flitted about among the iron work of the bridge, singing the vigorous little song that rings so forcibly through the deep woods, but which was here almost lost amid the din of machinery and the whistling of the wind. Here only did I hear the other true nuptial song of this Warbler described by Brewster and mentioned by Goss. Standing by the engine house on the top of the bridge I saw the male rise from the topmost girder, and, while hovering high over the river with outspread tail and fluttering wings and head thrown back, after the manner of the Maryland Yellowthroat, deliver first the usual rapid monotone of five or six notes and then a pleasing varied warble, full and strong in some of its notes and far sweeter than the usual utterance.

This day of bird study in strange places was ended by Mr. Harrison exhibiting to us from his collection on a goodly sized cigar box containing a Prothonotary Warbler's nest and set of six eggs. The box had been nailed the year before to a small building on a pier in mid-river, and in this isolated and far-away position had been compactly filled to more than half its capacity with moss and grass, carried from the river banks by a vigorous pair of these little birds. And still further evidences of the erratic domestic fancies of the species were pointed out. One pair had alternated seasons with a family of Bluebirds in a little wooden box affixed to a low post close by a switch house, and on the edge of a platform where baggage and passengers were daily transferred. Another couple had established themselves in a cleft in one of the piles of the retaining fence at the end of the bridge; still another in a tin cup in a small barn near the bridge, entering the building through a broken pane of glass; and lastly a pair began a nest in a pasteboard box on a shelf in a little summer house by the river bank, but were disturbed before completing it. Surely a surprising record and showing this charming bird possessed of a nature capable of a degree of domestication equal to that of the Martin, Phœbe, Bluebird and House Wren.

In concluding this paper it may be fairly said, I think, that it has been clearly shown that the subject of this sketch not only penetrates in goodly numbers well up into Minnesota territory, but that it has been long and well established there; is at home

in many and diverse places; and that its regular presence in such numbers imparts to this portion of the upper Mississippi Valley a faunal coloring of rather more southern hue than was to be expected.

NOTES ON SOME OF THE BIRDS OF EASTERN NORTH CAROLINA.

BY J. GILBERT PEARSON.

WHILE making some investigations during the past summer (1898) in connection with the State Geological Survey, I was located from April 1 to August 20 on the North Carolina coast, at various points from Elizabeth City southward to Little River on the South Carolina border. The nature of my work was such as to permit of some opportunities for investigation of the avifauna of the regions visited, and as a result of the observations made at that time, I have prepared the following brief notes.

***Micropalama himantopus.* STILT SANDPIPER.**—The region about Cape Hatteras abounded in bird life during my second stay there, which began on May 2, and continued until May 20. On the wet grassy beaches near the lighthouse birds swarmed literally by the thousands. I there observed, and with one exception secured, specimens of Least, Spotted, Semipalmated, White-rumped, and Red-backed Sandpipers; Dowitcher; Sanderling; Semipalmated, and Black-bellied Plovers (some of the latter in full summer plumage); Yellowlegs and Greater Yellowlegs; Wilson's Snipe; Turnstone; and Long-billed Curlew. On May 19, I secured a Stilt Sandpiper. It was shot singly while flying alone, no other birds on the wing being near at the time. This I believe to be the first record of the bird taken in the State.

***Nycticorax nycticorax nævius.* BLACK-CROWNED NIGHT HERON.**—Information in regard to this bird's occurrence in North Carolina has been confined to a few scattering notes of single individuals which have been taken at various points. On April 30, I visited a colony of Herons which was breeding on a small island in Mattamuskeet Lake, situated in Hyde County, and counted there seventy-five nests of the Little Blue Heron, all of which contained eggs. These nests were situated in

cypress and willow trees at a distance from the ground varying from ten to twenty-five feet. Two nests of the Night Heron were found; one containing four slightly incubated eggs, the other two fresh ones. Three pairs of the birds were seen and a female which was shot contained in her oviduct an egg which probably would have been deposited in a few days. May 25 a little colony of six pairs of Night Herons was found on Great Lake near Newbern. All six of these nests were placed in a very thick, stunted cypress tree, standing out in the lake some fifty yards from the shore. None of the branches of the tree exceeded a yard in length and their outer ends were well draped with long gray moss, thus effectually screening the nests from view. The tree whose top reached but fifteen feet above the water, was capped by an Osprey's nest which contained three young. All the Herons' nests were occupied either by eggs or young birds, the number in a nest being four in each instance, except one nest which contained three fresh eggs.

In four other rookeries of Herons subsequently visited at points further south, Night Herons were seen, but in each case not over six or eight pairs were found breeding in any one colony. I am informed on good authority that quite a large colony of these birds have their breeding grounds in a swamp on Harker's Island, at the lower end of Core Sound.

Ardea tricolor ruficollis. LOUISIANA HERON.—On April 20, at Cape Hatteras, while standing on the sand at the very point of the cape, a Louisiana Heron was closely observed as it flew directly overhead, making for the shore and laboring with a strong southwest wind. A most thorough search of the swamps and ponds in the neighborhood failed to reveal any colony of nesting birds, and no other individuals were met with until reaching Beaufort.

At the upper end of a small mill-pond a mile or more long, located in Carteret County, about fifteen miles from Beaufort, there was found a small but very interesting colony of Herons. Two dozen nests of the Louisiana Heron were noted here and the birds could be obtained with but little trouble. At this date many of the eggs had hatched but there were yet several sets of fresh ones to be seen.

Between this point and South Carolina three other places were visited where these birds were nesting. In one of the larger rookeries in Brunswick County there were on the first of June fully 500 pairs of breeding birds of this species.

During July and early August young Louisiana Herons and their parents come out of the fresh-water swamps in numbers and may be seen any day feeding, singly or in small flocks, along the marshes between Beaufort and Southport. It seems a little strange that so conspicuous and common a bird as this should never before have been mentioned in the lists of North Carolina birds.

Guara alba. WHITE IBIS.—The flat marshes which line the banks of North River, three to seven miles northeast of Beaufort, are the feeding

grounds during the entire year of numbers of birds which haunt such regions. In summer hundreds of Herons resort there to feed. There also in summer is occasionally seen the rare bird known to local sportsmen as the 'Mountain Curlew.' While up the river some five miles from its mouth I secured on July 26, a specimen of this bird from a flock of three individuals. It proved to be an immature White Ibis. I could get no account from any of the inhabitants of that region of this species having been seen there in its white phase of plumage. This bird has not, I believe, before been included in the avifauna of the State.

Anhinga anhinga. ANHINGA; WATER TURKEY.—While approaching a colony of Herons on the margin of the large rice-pond of the Orton plantation, on the west side of Cape Fear River, fifteen miles below Wilmington, on June 7, an Anhinga was flushed from its nest in a cypress tree about ten feet above the water. The bird flew rapidly away for perhaps thirty rods, then, turning, came driving back overhead, only to return shortly from the opposite direction. At each approach it appeared higher in the air until at a considerable altitude, when it began to circle on motionless wings. The bird was secured by hiding near the nest and shooting it when it alighted near. It was a male in magnificent plumage. Another male bird was seen but no females were observed nor were any other nests found. The nest examined was a heavy structure of sticks and twigs, lined with gray moss (*Tillandsia usneoides*). It contained four badly incubated eggs. I am aware of no previous record of the bird breeding north of South Carolina.

Phalacrocorax dilophus floridanus. FLORIDA CORMORANT.—These birds have for some time been known to spend the summer months on our coast, but it was not until the 25th of last May that I was able to locate a breeding colony. After penetrating the woods, swamps, and fresh-water marshes in Craven County for a distance of ten miles or more from the small railway station of Havelock, I at length reached the beautiful secluded sheet of water known as Big Lake. This body of water is approximately five by seven miles in extent. The shore is lined for two thirds the distance by a dense cypress swamp, the remaining third being clothed with a barren pine pocosin. The forest everywhere comes down to the water's edge, and many cypress trees and stumps stand out in the lake for a distance of one or two hundred yards. Many of those trees were capped with Osprey's nests. Along the north side of the lake the Cormorants had their breeding place. Low spreading cypress trees, their tops reaching as a rule not more than twelve to fifteen feet above the water, and standing from fifty to two hundred yards from shore, were the sites chosen for the nests. Eighteen trees, scattered along the shore for a mile and a half, were thus used. A few trees contained only one nest each, some were occupied by two, while in several others six, eight, ten, and twelve were noted. One tree held thirty-eight occupied nests. The number of occupants to the nest, either eggs or young birds, varied from two to three. Many of the young were

old enough to walk about on the limbs of the trees. In all 150 inhabited nests were counted.

The trees holding a number of nests each were evidently old breeding places, for the trunks, limbs, twigs, and every nest was as white from the dried excrement of the birds as though buckets of whitewash had been thrown over all with a generous hand. All signs of life had gone out of the trees save a few bunches of green leaves at the extreme ends of some of the smaller twigs.

No other colony of Cormorants was located, although a roost containing some 200 birds was discovered in an adjoining county.

Stercorarius parasiticus. PARASITIC JAEGER.—These birds are reported by fishermen and life saving station men to occur along our coast during the fall of the year, at which time they are often seen chasing Gulls in order to secure their disgorged prey.

In looking over the collection of a taxidermist, Mr. A. Piner, at that time located in Morehead City, N. C., the owner showed me some strange birds which he had taken at various times and for which he had no name. Two of these proved to be Razor-billed Auks (*Alca torda*) taken in Lookout Cove, "sometime after Christmas in the winter of 1890." Another bird which he had secured near Cape Lookout in the autumn of 1897 I found to be an immature *S. parasiticus*. Neither this bird nor the following named species are included in the list of North Carolina birds, published by Atkinson in 1887, or the one issued by Smithwick in 1897.

Oceanites oceanicus. WILSON'S PETREL.—This Petrel is well known to all who have occasion to spend much time on the ocean off the Carolina coast in summer. The birds are seldom seen near the shore unless during windy weather, when on such occasions they are often present in large numbers. During the severe storm which raged on the coast August 28, 29, and 30, 1893, many thousands of these birds were driven and washed ashore along the line of beach extending from the mouth of Beaufort Harbor to Cape Lookout, a distance of ten miles. I have this information from several reliable parties. The date of the storm was taken from the log-book of Capt. Wm. H. Gaskin of the Cape Lookout Life Saving Station.

Mr. James Davis, a well known business man in Beaufort, who had occasion to go along the beach to a wreck just after the storm, says: "Every two or three yards lay a Mother Cary's Chicken; many were dead, others were alive but too weak to fly. In places two or three would be lying together; at certain points for a distance of many feet the ground would be completely covered with the bodies, sometimes piled two or three deep. This was frequently the case until I reached the bight of the cape. Here in the cove the slaughter had been tremendous. Thousands of birds sat or lay on the ground, covering the beach like a blanket, extending from the water's edge up into the grass on the higher

ground. The fishermen of the neighborhood carried home with them baskets filled with these birds to eat."

Cistothorus palustris griseus. WORTHINGTON'S MARSH WREN.—A Wren taken in the salt marshes at old Topsail Inlet, near Beaufort, on August 2, was identified by Prof. Robert Ridgway as being *C. p. griseus*. The birds seemed not uncommon in certain of the marshes and several unoccupied nests were examined. In the marsh on Gull Island, in Pamlico Sound, about twenty miles north of Cape Hatteras, Marsh Wrens were found in numbers on May 20. Twelve nests were examined, but no eggs or young were found. A specimen taken at this place was pronounced by Mr. C. S. Brimley of Raleigh, N. C., to be *griseus*. Wrens heard singing in the marshes about Southport on June 9, I took to be of this variety, but I did not secure any specimens and hence cannot be positive as to this identification.

SOME WINTER BIRDS OF NOVA SCOTIA.

BY C. H. MORRELL.

I WAS in Cumberland County, Nova Scotia, from the first of December, 1897, until the fourth of April, 1898, and though collecting was not the object of my visit, careful observations were made and notes taken of the birds seen during that time. The variety of species to be found there at that period is not extensive. December, the first week in January, the last week in February and the month of March was spent on the shore of Chignecto Bay, principally at Shulee, though some time was spent at Joggins, River Hebert and Amherst. During the greater part of January and February I was at Parrsboro on the Basin of Minas. There was little snow in December, the ground being bare most of the time, and no very cold weather. The principal snowfall was in January and February, and the coldest weather was during those months. Several severe storms occurred. March was exceptionally fair and pleasant. The sun shown warm from almost cloudless skies and under its influence the snow melted rapidly, the migrants began to arrive, and the winter birds were soon in full song.

The growth from Joggins to Shulee is mainly spruce, though some hard wood grows on the higher ridges. The shore is lined with rugged cliffs which are wooded to the edge in most places. Spruce also prevails about Parrsboro though there the woods have been cut away and there is more open country. Amherst is in the midst of rich farming land and is surrounded by broad fields and marshes.

In addition to those mentioned, several species of Gulls and Ducks were seen but as no specimens were taken they could not be positively identified. A list of the species seen is appended.

1. **Gavia imber.** LOON.—One seen in the bay near Joggins, Dec. 7.
2. **Larus argentatus smithsonianus.** AMERICAN HERRING GULL.—Common on both shores.
3. **Anas obscura.** BLACK DUCK.—Common along shore all winter.
4. **Harelda hyemalis.** OLD SQUAW.—Frequently seen about the shores at Parrsboro.
5. **Branta canadensis.** CANADA GOOSE.—A flock of 12 seen at Joggins Dec. 7. The returning migrants arrived early in March.
6. **Canachites canadensis.** CANADA GROUSE.—The 'Spruce Partridge' was called a common bird by residents. I did not see it.
7. **Bonasa umbellus togata.** CANADIAN RUFFED GROUSE.—An abundant resident.
8. **Bubo virginianus.** GREAT HORNED OWL.—Once seen and frequently heard.
9. **Dryobates villosus.** HAIRY WOODPECKER.—One seen at River Hebert, Dec. 8, and one at Shulee, Jan. 2. Seemingly not common.
10. **Dryobates pubescens medianus.** DOWNY WOODPECKER.—A common resident.
11. **Picoides americanus.** AM. THREE-TOED WOODPECKER.—Through the kindness of Messrs. Edward and Robert Christie I visited their logging camp on March 16. The camp is four miles in the spruce growth, about equal distance from River Hebert and Two Rivers. It was a favorite locality for many birds. While there I heard Woodpeckers drumming and soon located three of this species. After drumming for some time they came down to the dried tops of spruces of previous cuttings which were everywhere, and worked about over them. They were very fearless and I stood within two yards of each in turn and watched them for some time. Two were males with golden crown; the third was evidently a female. These three were the only ones seen.
12. **Cyanocitta cristata.** BLUE JAY.—Frequently seen toward spring.
13. **Perisoreus canadensis.** CANADA JAY.—A common resident. Very fearless, coming about the buildings for scraps. I saw birds with grass in their bills late in March. They evidently nest in April.

14. *Corvus corax principalis*. NORTHERN RAVEN.—Not common. A pair seen at Shulee and another pair at Partridge Island, near Parrsboro.

15. *Corvus americanus*. AMERICAN CROW.—Common all winter.

16. *Quiscalus quiscula aeneus*. BRONZED GRACKLE.—Migrants arrived at Shulee, March 22.

17. *Pinicola enucleator*. PINE GROSBEAK.—Abundant during December and first two weeks of January, after which none were seen, with the exception of one pair seen at Shulee April 3. Nearly all were in the dull plumage of female and young male. I did not see a full plumaged adult male.

18. *Carpodacus purpureus*. PURPLE FINCH.—A pair seen at Shulee January 2.

19. *Loxia curvirostra minor*. AMERICAN CROSSBILL.—I did not see this species until March when it became common. At that time the males were in full song, and the birds were paired, male and female always being seen together. If in flocks an equal number of each sex was present. The males of this and the following species sing well. Both sang much on fluttering, tremulous wings high above the tops of the spruces. I judged both species would nest in April. I was informed by Messrs. Christie that Crossbills were common about their camp all winter.

20. *Loxia leucoptera*. WHITE-WINGED CROSSBILL.—Seen at the same time and under same conditions as the preceding, but was more abundant. The species were often associated.

21. *Spinus pinus*. PINE SISKIN.—Small flocks were occasionally seen at Shulee and River Hebert in December. None were seen at Parrsboro. When I returned to River Hebert in March I found them by far the most abundant bird. There were thousands scattered throughout the spruces all along the shore, not in large flocks, but quite evenly distributed over many square miles of woodland. They were in full song and from sunrise until sunset their lisping notes were constantly heard. On the 16th of March while at Christie's camp I saw a bird gathering material and by watching her soon located the nest. The female alone carried material, the male accompanying her to and from the nest, singing constantly. A very short stop was made at the nest. Evidently some material was accumulated before it was arranged. A day or two after finding the nest I went to Shulee, so had no opportunity to again visit the nest until the 29th, when I left Shulee early in the morning, going to Two Rivers and thence through the woods to the camp. At this date the ground was mostly covered with snow in the woods, though it was rapidly melting. I found the nest completed. The bird refused to leave the nest until I was nearly within reach; she remained near, several times returning to the eggs for a moment. The nest was placed well out toward the end of a limb of a spruce tree, 27 feet above the ground. It was saddled on the limb and radiating twigs but not attached to them. Considering the size of the bird, it is quite large, rather flat

and bears no resemblance to nests of *Spinus tristis*, measuring as follows: height, 1.63 inches; depth, .75; outside top diameter, 4 inches; inside top diameter 2 inches. It is constructed mainly of dark pendulous tree-moss, with some fulvous bark from weed-stalks, plant-down, usnea, and other mosses. About the bottom of the nest is woven a few spruce twigs. The lining is entirely the pendulous moss. It contained four eggs but slightly incubated. These have a pale blue ground color, slightly darker than eggs of *Spinus tristis*, somewhat sparingly marked about the larger end with pale purplish and a few dots of brownish black. The eggs measure respectively, .66 X .50, .66 X .46, .63 X .49, .63 X .48, inches.

22. *Passerina nivalis*. SNOWFLAKE.—First seen at Parrsboro, January 19. Not very common, but three to twelve birds found in a flock.

23. *Passer domesticus*. ENGLISH SPARROW.—Common everywhere, even in the lumbering towns some distance from railroads.

24. *Spizella monticola*. TREE SPARROW.—Two seen at Parrsboro in company of three Slate-colored Juncos, on January 26.

25. *Junco hyemalis*. SLATE-COLORED JUNCO.—Seen several times during the winter at Parrsboro. Migrants arrived at Shulee on March 18 and in a few days the birds were abundant. They are locally called 'Bluebirds.'

26. *Melospiza fasciata*. SONG SPARROW.—One seen at Partridge Island pier, near Parrsboro, on Feb. 12, and in the same place on several subsequent days. Migrants reached Shulee March 22, becoming common at once.

27. *Passerella iliaca*. FOX SPARROW.—A flock of migrants was seen March 29. They were in song.

28. *Ampelis cedrorum*. CEDAR WAXWING.—A flock of 10 seen in the city of Amherst March 1.

29. *Sitta canadensis*. RED-BREASTED NUTHATCH.—Common all winter.

30. *Parus atricapillus*. CHICKADEE.—A common resident.

31. *Parus hudsonicus*. HUDSONIAN CHICKADEE.—Abundant. Often seen accompanying the preceding. They are readily distinguished from *P. atricapillus* by their note alone.

32. *Regulus satrapa*. GOLDEN-CROWNED KINGLET.—Abundant. I was never in the woods any length of time without meeting a flock. In March I frequently heard the summer nesting song.

33. *Merula migratoria*. AMERICAN ROBIN.—A pair seen at Shulee in a dogwood tree feeding on the berries on Dec. 24, and one was seen in the same place next morning. I was informed that a pair had wintered there several times. Migrants arrived March 28.

NEW SPECIES, ETC., OF AMERICAN BIRDS.—IV.
FRINGILLIDÆ (Concluded); CORVIDÆ (Part).

BY ROBERT RIDGWAY.

Curator of the Division of Birds, U. S. National Museum.

(By permission of the Secretary of the Smithsonian Institution.)

Pipilo maculatus atratus. SAN DIEGO TOWHEE.

Similar to *P. m. megalonyx* but decidedly darker, with white markings of wings and tail more restricted; adult male continuously deep black above (except for the usual white markings), even the rump being deep black, instead of more or less conspicuously grayish; adult female with throat and chest very dark clove brown or sooty black, and general color of upper parts deep clove brown.

Southern coast district of California, south of Sierra San Fernando and Sierra San Gabriel, and south into Lower California.

Type, No. 159474, U. S. Nat. Mus., ♂ ad., Pasadena, Los Angeles Co., California, Feb. 8, 1896; Joseph Grinnell.

Pipilo fuscus potosinus. BARRANCA TOWHEE.

Similar to *P. fuscus* but larger, paler, and grayer, the pileum paler and more frequently tinged with rusty brown; buff of gular area paler, with surrounding dusky triangular spots averaging smaller and not so black; color of under tail-coverts, etc., slightly paler (dull ochraceous or ochraceous-buff rather than cinnamon-tawny).

Central plateau of Mexico, from States of Puebla, Vera Cruz (western edge), Hidalgo, San Luis Potosi, Guanajuato, etc., northwestward to southern Chihuahua.

Type, No. 78106, U. S. Nat. Mus., ♂ ad., Guanajuato, Mexico: A. Dugès.

Aimophila rufescens sinaloa. SINALOA SPARROW.

Similar to *A. r. pallida* but back and scapulars decidedly paler and grayer, under parts more buffy (chin, throat, and malar stripe pale buffy

instead of white and sides and flanks deep buff washed with olive, instead of light buffy olive), brown postocular streak much narrower, sides of head lighter gray, and bill shorter and relatively deeper.

Western slope of Sierra Madre, State of Sinaloa, northwestern Mexico.

Type, No. 8393, California Academy of Sciences, ♂ ad., Tatemalis, Sinaloa, May 28, 1897; W. W. Price.

Cyanocorax affinis zeledoni. TALAMANCA JAY.

Similar to *C. affinis* Pelzeln, of Colombia, but decidedly brighter colored, with under parts of the body and tips of rectrices distinctly yellow (light creamy yellow) instead of white or yellowish white.

Isthmus of Panama to Costa Rica (Talamanca).

Type, No. 67972, U. S. Nat. Mus., ♂ ad., Talamanca, Costa Rica; José C. Zeledon.

Those who have recognized two geographical forms of this species have restricted the name *affinis* to this form and called the Colombian bird *Cyanocorax sclateri* Heine. The type of *C. affinis*, however, came from Bogota, and the original description gives the color of the underparts, etc., white. Furthermore, having compared birds from Bogota and Cartagena (the type locality of *C. sclateri*), I can discover no difference between them.

Cyanolyca mitrata.

This name is proposed as a substitute for *C. ornata* (*Fica ornata* Lesson, 1839), the latter name being preoccupied by *Pica ornata* Wagler, 1829, for a species of the Asiatic genus *Cissa*.

Perisoreus obscurus griseus. GRAY JAY.

Similar to *P. obscurus* but decidedly larger (except feet) and coloration much grayer; back, etc., deep mouse gray, instead of brown, remiges and rectrices between gray (No. 6) and smoke gray, instead of drab gray, and underparts grayish white instead of brownish white.

British Columbia, Washington, Oregon, and northern California, east of the Coast and Cascade ranges.

Type, No. 156543, U. S. Nat. Mus. (U. S. Biol. Survey Coll. No. 5269), ♂ ad., Keechelus Lake, Kittitas Co., Washington, August 15, 1897; Dr. A. K. Fisher.

Cyanocitta stelleri azteca. AZTEC JAY.

Similar to *C. s. diademata* (= *Cyanura macrolopha* Baird¹) but neck, back, and scapulars dull blue, instead of brownish gray, crest more or less tinged with blue, and the general blue color much deeper (rump, underparts, etc., azure blue instead of pale blue or turquoise blue, the wing-coverts, secondaries, and tail dull paris blue instead of dull cobalt blue); streak on forehead more tinged with blue.

South-central Mexico, in the States of Vera Cruz (Orizaba, etc.), Puebla, Morelos, Mexico, and Michoacan.

Type, No. 35156, U. S. Nat. Mus., Mountains near Mirador, Vera Cruz, June, 1864; C. Sartorius.

The name *Cyanocitta galeata* Cabanis is a synonym of *C. s. coronata* (Swains.), Cabanis, like Sharpe, having incorrectly applied the name *coronata* to the present form.

DESCRIPTION OF A NEW *GEOTHLYPIS*.

BY HARRY C. OBERHOLSER.

THE form of *Geothlypis trichas* inhabiting the Pacific coast region of the United States appears to be subspecifically distinguishable from that of the interior, to which it has heretofore been referred. As the type of *Geothlypis t. occidentalis* came from the Truckee River, Nevada, and thus represents the bird of the latter area, it is the purpose now to separate the Pacific race under the name

¹ The name *Cyanocitta diademata* or *Cyanocitta stelleri diademata* has been quite universally misapplied to the form of southern central Mexico, here renamed as above. The type locality of Bonaparte's *Cyanogarrulus diadematus* is Zacatecas, on the western side of the Mexican plateau; and specimens collected there by Mr. Nelson are distinctly referable to the Rocky Mountain form which Prof. Baird later named *Cyanura macrolopha*. It therefore becomes necessary to use the name *diademata*, instead of *macrolopha* for the Rocky Mountain bird, and to rename the bird to which the name *diademata* has been erroneously applied.

Geothlypis trichas arizela, subsp. nov.

CHARS. SUBSP. — *Geothlypis G. t. occidentali similis sed minor, verticis fascia albida magis restricta.*

Al., 53.5-59 (57.1) mm.; caud., 50-58.5 (54.4) mm.; culm. exp., 10-11 (10.4) mm.; tars. 19.5-21 (20.2) mm.

Geographic Distribution. — Pacific coast region from southern British Columbia to northern Lower California; east to the Cascade Mountains and to the west slope of the Sierra Nevada; south in winter to Cape St. Lucas and Tepic.

Description. — Type, male adult, No. 7918, U. S. Nat. Mus.; Fort Steilacoom, Wash., May 13, 1856; Dr. Geo. Suckley. Upper surface dull olive green, clearer on the rump, more brownish on the crown; tail olive green, brighter exteriorly; wings fuscous, margined externally with olive green; forehead and sides of head back to and including auriculars black, bordered posteriorly by a rather narrow creamy white band, broadest on the forehead; throat and breast bright yellow, shading gradually into the creamy buff of abdomen; crissum yellow, rather paler than throat; sides conspicuously washed with brownish; bend of wing below yellow; lining of wing buffy.

Young in first plumage. — No. 101497, U. S. Nat. Mus.; Fort Klamath, Oregon, July 20, 1883; Major Chas. E. Bendire. Above nearly uniform warm olive brown, inclining to olive green on the rump; wings and tail as in the adult, but the greater and median wing-coverts broadly tipped with ochraceous; lores dull yellowish; sides of head and neck like the back; chin dull buffy yellowish; throat and breast yellowish, washed with brownish; abdomen buffy; sides heavily tinged with brown; crissum olive yellow.

From *occidentalis* the present race may be readily distinguished by its much narrower white frontal band, and also by its appreciably smaller size; though the former character is of course not available for determination of females and young. It differs from *trichas* as does *occidentalis*, but in dimensions not to so marked a degree. Intermediates between *trichas* and *occidentalis* such as occur on the Great Plains, come sometimes rather close to *arizela*, but the larger size of the latter, together with the usually much less ashy shade of the light markings on the head, will serve to distinguish the majority of specimens.

A June bird from Tecate Valley, Lower California, seems to be quite typical; one of similar season from Owens Lake, California, though intermediate, is, so far as may be judged from a single individual, nearer *arizela* than to *occidentalis*. The solitary

specimen from Comox, British Columbia, has a wider frontal band than any other example of *arizela*, but as in size it does not differ, this may be but an individual variation, since by geographical reasoning the Yellow-throats from southern Vancouver Island should belong to the present form.

Following is a list of the localities from which specimens of *arizela* have been examined, an asterisk indicating the breeding records:

British Columbia.—Comox.

Washington.—Fort Steilacoom*; Chiloweyuck Depot*; Shoalwater Bay.

Oregon.—Fort Klamath*; Plush*.

California.—Owens Lake*; Carberry's Ranch*; Stockton.

Lower California.—Tecate Valley (Mex. Bound. Line)*; La Paz; San José del Cabo.

Sinaloa.—Mazatlan.

Tepic.—Tepic.

For comparison, the average measurements of five adult males of each of the three forms here mentioned are appended:

NAME.	Wing.	Tail.	Exposed Cuimen.	Tarsus.
<i>Geothlypis trichas trichas</i> . . .	53.9	48.9	10.7	20.
<i>Geothlypis trichas occidentalis</i> . .	59.3	55.1	11.1	21.1
<i>Geothlypis trichas arizela</i> . .	57.1	54.4	10.4	20.2

The writer would here express his appreciation of the kindness of Mr. Ridgway and Dr. Merriam, with regard to the use of the material from which this paper has been prepared.

THE TERNS OF MUSKEGET AND PENIKESE ISLANDS,
MASSACHUSETTS.

BY GEORGE H. MACKAY.¹

THE change in conditions taking place from time to time in the Muskeget group of islands, where these birds breed, as also in the birds themselves, serves to retain one's interest and render continued observations desirable, that accurate information may be gathered.

Since last year nearly one third of Gravelly Island has been washed away. Adams Island has also been much reduced in area. At the South Point of Muskeget Island proper, the ocean has again broken through at the same place where it did four and five years ago, making South Point Island again an island.

It was with much concern, after visiting Muskeget waters last season (1897), that I looked forward to the season of 1898, and what it might have in store, for it seemed as if additional effort should be made, not only to keep all the Terns possible, but to induce those which had departed to again return. The town of Nantucket having voted one hundred dollars to provide an especial police officer (under an act of the Massachusetts Legislature of 1895) to care for these Terns, I was instrumental in having Mr. John Sandsbury appointed to the position. He remained on Muskeget from May 1 to August 15, 1898. His first visit there was from the 9th to the 17th of April, and during this period he did not see any Least Terns (*Sterna antillarum*), although this is the time they are generally about. On May 3, 1898, the wind was northeast, cold and raw; May 4, wind northeast, until noon, calm in the P. M.; May 5, wind southwest, moderate and cloudy. May 6, wind north to northeast, cloudy in the A. M., but changed to southwest in the P. M. At seven o'clock A. M. the first arrival of Terns this season was noted,—a few birds, so high up in the air as to render the variety indeterminable. May 7, wind northeast. Mr. Sandsbury saw about

¹ Read before the Nuttall Ornithological Club, Nov. 7, 1898.

fifty Terns, and for the first time he heard, in the afternoon Laughing Gulls (*Larus atricilla*), although he saw none. On May 9 the Wilson Terns were very numerous around Gravelly Island shoals; a very few Roseate Terns (*Sterna dougalli*) were noticed among them. By May 18 new warning notices had been prepared and posted on the various islands.

On this date the Terns were observed carrying straws, etc., for their nests. On May 25 the first eggs of the season were discovered,—five nests containing one egg each. On May 27 Mr. Sandsbury walked across Muskeget Island proper and back again in nearly a straight line, and noted eight nests containing one egg each, and two nests containing two eggs each. By June 8 the Terns were abundant. Mr. S. again walked across Muskeget Island proper, as before, and noted thirty-one nests containing one egg each; sixty-six nests with two eggs each, and ten nests with three eggs each. On June 21 he walked across the centre of Muskeget proper and noted nine nests with one egg each, sixty-two nests with two eggs each, nineteen nests with three eggs each, and thirteen nests with four eggs each.

On June 24, Mr. S. searched for Laughing Gulls' nests and discovered eight containing two eggs each, and three nests containing three eggs each, these being the first noted this season (1898). On this date he observed three Tern chicks, two of which were just out of the shell and still wet, the other was in the down. It was singular to find that the one colony of Laughing Gulls, breeding on Muskeget proper, should have selected as a breeding place this season the abandoned site of the old life-saving station, which is less than half a mile from the present one. Here I found the old birds using all the old posts as lookout stations, and the top of the flag-pole, the favorite place of all, was constantly in demand, and frequently it was struggled for by two or more birds. Near by were their nests, eggs and chicks. In consequence of the care exercised the birds have enjoyed an unmolested season and most favorable breeding conditions, the results of which have surpassed my highest expectations.

— The number of eggs observed, by actual count after a most exhaustive examination of all the breeding islands in Muskeget

waters, shows that these birds are at the highest point of abundance in their history. This satisfactory condition does not include the Roseate Terns; as far as these waters are concerned, their numbers, I regret to state, are still below the splendid aggregate of 1896. I think that some of them found a home at Penikese Island this season, while others may return next year. After completing this investigation I was unable to use my eyes but little for three weeks, the result of the radiated heat and glare from the beaches.

I passed July 2, 3, 4 and 5, 1898, on Muskeget and adjacent islands, the results of which examination are here submitted:

GRAVELLY ISLAND, JULY 2, 1898.

Terns.

<i>Nests.</i>	<i>Eggs.</i>	
1 egg each,	66	66
2 eggs "	276	552
3 " "	65	195
4 " "	4	16
5 " "	1	5
Totals,	412	834

Live chicks, 23.
Dead chicks, 5.
8 nests of one egg and 1 chick.
1 nest of 2 eggs and 1 chick.
2 nests of 1 egg and 1 chick dead.

Laughing Gulls.

1 nest with 1 egg; 1 nest with 3 eggs.

Three quarters of the Terns estimated to be domiciled here are Wilson Terns (*Sterna hirundo*), the other quarter being Roseate Terns (*S. dougalli*). There are but four or five pairs of Laughing Gulls breeding here.

I observed on this island the present season the greatest concentration of Terns' eggs I have ever seen. The location was a slightly elevated, isolated knoll of sand on the beach, covered with beach grass (*Ammophila arundinacea*). To ascertain its size I paced it, and found it to be about 24×18 feet. I then subdivided it and called up Mr. Sandsbury to aid me in the count. In this restricted area were eighty Terns' eggs, as follows: eleven nests with one egg each; twenty-six nests with two eggs each; four nests with three eggs each. There were four nests containing one egg and one chick each, and one nest with one egg and two chicks, and two chicks away from their nest.

ADAMS ISLAND, JULY 2, 1898.

Terns.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	90	90	Live chicks, 15.
2 eggs "	168	336	Dead " 1.
3 " "	31	93	4 nests of 1 egg and 1 chick each.
4 " "	6	24	
5 " "	none	none	
Totals,	295	543	

It will be noticed that this island, which is situated near the others, now appears for the *first* time as a breeding resort. Heretofore there have been several small fishermen's huts here which have been occupied in recent years during the birds' breeding period. Different conditions, however, prevailed this year, owing to the disappearance of the shell-fish, huts and fishermen, and this island, formerly a portion of Muskeget proper (I have walked to it in former years), has again resumed its primitive condition. The birds having nothing to disturb them there the present season, took possession of the island, and I found a colony of about four hundred *S. hirundo* and *S. dougalli* breeding with the gratifying result shown above.

SOUTH POINT ISLAND, JULY 2, 1898.

Terns.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	226	226	Live chicks, 159.
2 eggs "	519	1038	Dead " 21.
3 " "	91	273	26 nests with 1 egg and 1 chick.
4 " "	8	32	1 nest with 2 eggs and 1 " "
5 " "	1	5	
Totals,	845	1574	

Laughing Gulls.

1 egg each,	2	2	Live chicks in down away from nest, 5.
2 eggs "	6	12	1 nest with 1 egg and 2 chicks in the down.
3 " "	8	24	1 nest with 2 eggs and 1 chick in the down.
Totals,	16	38	

As will be perceived, this island continues to hold its own with the most favorable showing of any of the other breeding resorts. I again noted this season, as I have in previous years, considerable difference in the size of the Tern chicks found here. I attach no importance to this variation, it undoubtedly being due to the different dates of hatching. The Laughing Gull chicks were about all of one size.

SOUTH POINT OF MUSKEGET ISLAND, JULY 4, 1898.

Terns.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	111	111	Live chicks, 67
2 eggs "	161	322	Dead " 11
3 " "	24	72	11 nests with 1 egg and 1 chick
4 " "	2	8	2 " " 2 eggs and 1 "
5 " "	none	none	
Totals,	298	513	

Laughing Gulls.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	none	none	
2 eggs "	1	2	Also noted five empty nests.
3 " "	2	6	
Totals,	3	8	

MUSKEGET ISLAND, JULY 3, 1898.

Terns.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	173	173	Live chicks, 83
2 eggs "	385	770	Dead " 26
3 " "	95	285	3 nests with 1 egg and 1 chick.
4 " "	4	16	3 " " 2 eggs " 1 "
5 " "	1	5	1 nest " 3 " " 1 "
Totals,	658	1249	

Laughing Gulls.

<i>Nests.</i>	<i>Eggs.</i>		
1 egg each,	3	3	
2 eggs each,	9	18	
3 " "	7	21	
Totals,	19	42	

Noted a number of empty nests, the eggs of which had probably been previously hatched. I saw but few chicks, however.

The birds were breeding this season most abundantly at the east and west ends of the island. While walking over the island on July 1, Mr. Sandsbury saw a Wilson Tern suddenly fall nearly at his feet from the air. On examining the bird, which was apparently nearly dead, he could find nothing out of the way; smoothing its feathers, he laid it on its breast on the sand, and placing an upright stick beside it, that he might find it on his return, he left it. It was not there on his return, and as no one had been in view meanwhile, he supposes the bird recovered and flew away.

Soon after my visit I learned from Mr. S., and later from others, that quite a number of Wilson Terns had been found dead on *this* island, with no apparent injury externally, their plumage being unruffled. Mr. S. estimated the number he had seen at thirty. None were observed on any of the other islands. No Roseate Terns were noted among these dead birds, although Mr. S. looked for them. They were apparently all Wilson Terns (*S. hirundo*), with the exception of two birds, which he described as having *very dark* breast feathers. It is probable that these were Arctic Terns (*S. paradisea*), as he found them in the locality most frequented by them. It has been rather rare in my experience to find dead adult Terns lying about on any of the islands. I cannot recall over two or three in half a dozen years. I have no facts to offer in explanation. A good many young Terns just about to fly, were also found dead by Mr. S. this season, but on consulting with him later we concluded that the mortality was only normal.

I noticed fewer Arctic Terns this season than formerly, but I am not sure that their former numbers have decreased. I saw two or three on Muskeget proper, near the middle of the island, on July 3, one of which was particularly aggressive.

Of the eggs discovered this season all were normal with the exception of one clutch of two Roseate? eggs taken on July 4. The ground color of one of these was white, with the faintest tinge of green, with fine pen-point brown dots sparsely distributed over the whole egg, increasing in density, but only occasionally in size, towards the larger end of the egg; the other egg was of similar size and normally dark colored.

PENIKESE ISLAND.

In presenting my account of the Colony of Terns domiciled on Penikese Island, in Buzzards Bay, it gives me pleasure to acknowledge the aid I have received, in various ways, from the Messrs. Homer Brothers, owners of the island. Mr. Frederick A. Homer has, at my request, kindly taken some notes for me during the past season (1898) which add so materially to the interest and value of this contribution that I feel I cannot do better than to embody the greater part of his letter on this subject, as follows: "On the afternoon of May 10, with fair weather and south wind, the Terns of Penikese arrived, and in larger numbers than for years. This latter statement is confirmed by the fishermen who harbor at the island, and by the inhabitants of the neighboring island of Cuttyhunk. On the 28th of May the first eggs were seen, and from this date the eggs increased rapidly, and finally proved the largest laying in my experience. On the 23d of June hatching commenced, and on the 22d of July about one half the young could fly, and by the 7th of August, *all* the young were on the wing. The young were in great numbers, and I fully believe it was the largest and most successful hatch for years. Naturally there were a great many crippled young, caused by the sheep treading upon them in their early infancy. I should estimate the number of such crippled birds at about two hundred. During the week ending August 21, great bodies of these Terns would rise suddenly from the shores, fly out over the water about a quarter of a mile, then wheel, return, and alight, then as suddenly rise again and repeat the manœuvre. This they repeated for a few days and then left the island in squads, till, on the 21st, they had almost entirely disappeared. The weather during this period was fair and the prevailing wind southwest.

"What few Terns were left (about one hundred and fifty) seemed to be caring for the weaker birds and cripples. These finally decreased day by day till on the 11th of September not a Tern was in sight. I have observed more Roseate Terns than ever before. I also noted that the nests generally were better constructed, and were really more like a nest.

"Gull Island seemed this year to be quite a favorite place for

the Terns and large numbers made their home there. I visited this island once during the infancy of the young and the air was full of the older birds, and very savage they were, too. There were also more birds on the mainland than I have ever noticed before.

"In conclusion I will say, I think you would be abundantly satisfied with the Penikese colony of Terns, for in my estimation there has been a decidedly larger number of old birds than for years, as well as a larger number of young, and they seem to have increased in the past few years very materially."

The old signs of last year were repaired, and repapered with new warning notices, in Portugese and English, and all made ready before the birds commenced to lay their eggs.

There are other places in Massachusetts waters where Terns breed in small colonies, but they do not call for especial mention here. One of these is located about the eastern head of Nantucket harbor (where the ocean several years ago cut through), where they bred the past season. There is another fairly large colony domiciled within our boundaries which I have intended to visit, but have not done so. It is my intention to investigate it next summer, the results of which, if sufficiently important, will be placed before the readers of 'The Auk.'

THE SPARROWS OF MISSISSIPPI.

BY ANDREW ALLISON.

THIS brief summary, while embracing, I think, some species not previously reported from the State of Mississippi, is perhaps not a complete synopsis of the species found there, but deals only with those that either I myself have found occurring, or which have been otherwise recently proved to occur. Some species that I have not seen in the State—viz.: the White-crowned Sparrow (*Zonotrichia leucophrys*), which occurs, though uncommonly, in the vicinity of New Orleans, and the Fox Sparrow

(*Passerella iliaca*), which is a regular winter bird in some parts of Louisiana—should certainly be found; but, probably on account of the very poor opportunities I have had for winter field work in Mississippi, I have not had the good fortune to find them.

The genera known to me to be represented are: *Poæcetes*, *Ammodramus*, *Chondestes*, *Zonotrichia*, *Spizella*, *Junco*, *Peuæea*, and *Melospiza*. Of the first genus, the well-known Vesper Sparrow is necessarily the representative; of the second, seven species and subspecies occur. *Chondestes* is represented by its only species; *Zonotrichia* has, apparently, but one representative; *Spizella* two; *Junco* and *Peuæea* each one, and *Melospiza* two.

Poæcetes gramineus. VESPER SPARROW.—A winter resident, appearing as far south as 31° about the last of October, and becoming common in a week after the first birds arrive. Its favorite haunts are old fields, preferably those grown up near the edge with scrub pines.

Ammodramus sandwichensis savanna. SAVANNA SPARROW.—This seems hardly as abundant in Mississippi as in Louisiana, where it is almost everywhere one of the commonest winter birds; in Amite County, Miss., where I stayed until November 16 in the fall of 1897, I did not see a single specimen, though it arrives at New Orleans early in October. On the Gulf Coast, comprising Hancock, Harrison and Jackson Counties, it is abundant, though apparently not arriving as early as in Louisiana at corresponding latitudes. In these counties it flocks with the preceding Sparrow in the pine clearings, and frequents the dry marshes to some extent.

The bulk of the individuals leave in spring about April 20, but a few linger until the second week in May, and Prof. G. E. Beyer, of Tulane University, New Orleans, has in his collection a skin from Covington, La., labelled June 15.

Ammodramus sandwichensis alaudinus. WESTERN SAVANNA SPARROW.—Accidental, and, so far as I know, only one specimen has been reported from the State. This was seen by my brother, W. B. Allison, and myself, in Amite County, on November 12, 1897, and secured. It was identified by Dr. Merriam.

Ammodramus savannarum passerinus. GRASSHOPPER SPARROW.—Strangely uncommon in all parts of Mississippi to which I have recently had access; it is a regular, though not a common, breeder near New Orleans, but is not resident, and so is probably only a breeder in Mississippi.

Ammodramus henslowii. HENSLOW'S SPARROW.—This beautiful little Sparrow is probably a winter resident in Amite County, and is not

uncommon in the late fall. I have had no opportunities for observation in this county later than November 16, but, as an influx of these Sparrows arrived on the 15th, there is reason to believe that the winter numbers come in about that time.

I first saw it on October 9, 1897, when I secured one specimen; from this time until November 1, when my brother took another, an occasional elusive individual was seen. Until November 15, no more were seen, but on that date a number, some ten or fifteen, came in, in company with some Leconte's Sparrows (*A. leconteii*). Their general dark coloration contrasted well with the broadly white-edged backs of the latter, and made identification of both easy.

Ammodramus leconteii. LECONTE'S SPARROW.—This species has never, I think, been reported from Mississippi before, though Fuertes's specimen from New York makes almost any locality seem probable. In February, 1895, Prof. Beyer, of Tulane University, took a specimen on Avery's Island, off the southwest coast of Louisiana.

On the above mentioned occasion, November 15, my brother and myself found eight or ten Leconte's Sparrows in Amite County, in an old field, overgrown with crab-grass. This they seemed to prefer to the more open and less weedy cotton-fields, and we found them very difficult of capture, shooting only two, one of which we were unable to find. We had no time to explore other similar localities, or we should probably have found them equally common there. Unfortunately we were unable to remain after the next day, and Leconte's Sparrow in Mississippi sank again into oblivion. From the comparative abundance in which we found it on the single occasion, I incline to think it a regular winter resident, or at least a regular visitor.

A. maritimus and *A. caudacutus* are both represented in the marshes of the coast; the Seaside Sparrow is very abundant, but the Sharp-tailed I have not found common. Both are probably resident: the former becomes extremely abundant about the first of October, and, after a silence lasting through the summer, begins to sing in a lisping, wren-like way that is very pleasing.

Chondestes grammacus. LARK SPARROW.—This species rarely wanders as far east as Mississippi, and the only specimen I know of from that State was taken on September 4, 1897, at Beauvoir, Harrison County, by Mr. H. H. Kopman. The specimen is in Prof. Beyer's collection.

Zonotrichia albicollis. WHITE-THROATED SPARROW.—This, with the exception of the Swamp Sparrow (*Melospiza georgiana*), is our commonest winter bird, in suitable localities; the first individuals reach a latitude of 31° a few days before the middle of October, and a gradual increase follows until about the first of November, when the bulk arrives, and every hedge and brush-pile is alive and vocal with Sparrows. They are very common from about the 20th of October, but from November 1 to March 1 is their particular season of abundance.

The White-throated sparrow is the most faithful of our southern winter

songsters, and in the early morning both thicket and orchard ring with their clear, sweet notes. They are extremely fond of mingling with other species, and I have seen an immense flock composed of White-throated, Chipping, Field, Song and Swamp Sparrows, and Slate-colored Juncos, all feeding together on the best of terms.

Spizella socialis. CHIPPING SPARROWS.—In the pine regions of Mississippi it is about equally abundant with the Field Sparrow (*S. pusilla*) in winter, though on the coast it is commoner than the latter. As a breeder it does not occur on the coast, but breeds abundantly, though rather irregularly, in Amite County. In 1897 I saw not a single individual until the winter numbers began to arrive, whereas in 1894 and 1895 it bred abundantly. Madison County, though farther north than Amite, has very little pine forest, and I have never found the species there at all.

The influx of winter birds begins, in Amite County, in October, and shortly after they become so numerous that it is hard to determine when the migration ceases: about the 25th of October the flocks become very large, and are seen feeding impartially on the ground in the pine groves with Pine Warblers (*Dendroica vigorsii*), or in the thickets with White-throated Sparrows. In the 'deadeninges,' or tracts of open land, where the pines have been girdled, they fly in small scattered flocks restlessly from tree to tree, and flocks are continually descending to feed with the main body on the ground, where perhaps two or three hundred may be gathered at a time.

Spizella pusilla. FIELD SPARROW.—This species breeds sparingly in Amite County, abundantly in Madison County and thence northward. Early in October the winter numbers begin to arrive in the former county, and are then much associated with the preceding species.

Junco hyemalis. SLATE-COLORED JUNCO.—Arrives from the middle of October until about the same time in November, and winters abundantly, though apparently only reaching the coast in very severe winters.

Peucaea aestivalis bachmanii. BACHMAN'S SPARROW.—It hardly seems to deserve its name of 'Pinewood Sparrow' except in the extreme south of the State; in Madison County it breeds abundantly in the grass-fields, but seems to confine its attention largely to that county, as in Amite County I have seen but three specimens, a male, and two young of the year. These were found in an open grassy field on Sept. 26, 27, and 30, and all were taken.

On the coast, however, it is a common bird in the pine woods, and enjoys the distinction of being the only Sparrow breeding there. Its habits here remind one sometimes of the Savanna, sometimes of the Chipping Sparrow, while farther north it suggests the Field Sparrow strongly.

Melospiza fasciata. SONG SPARROW.—This is generally a rare breeder in Mississippi, though probably more common in that capacity in the most northern parts. The only instance of its nesting in central Mississippi, that has come to my notice, was in Madison County, in 1893;

on this occasion my brother and I found a single pair, in worn and blackish midsummer plumage, about the middle of June.

The winter residents begin to arrive in early November, and by the middle of that month they are fairly common; in midwinter they are doubtless much more abundant.

Melospiza georgiana. SWAMP SPARROW.—This is without doubt the commonest winter bird in Louisiana and Mississippi; the first birds arrive a little after the first of October, and the species is abundant within a week after that time. The full bulk arrives early in November, and contributes so many individuals to the already crowded thickets, that it is hard to see how so many can find sustenance. About the first week in March they begin to thin out, and in a month nearly all are gone, though near New Orleans I have seen a single one as late as May 3.

GENERAL NOTES.

Record of a Fifth Specimen of the European Widgeon (*Anas penelope*) in Indiana.—A specimen of this Duck was killed by a local gunner on the marshes at English Lake, Indiana, on the 15th April, 1899. The gunner was not acquainted with the species, never having seen one before, but called the attention of Mr. John Taylor, Supt. of the English Lake Shooting and Fishing Club, to a red-headed Widgeon which he had just killed. Mr. Taylor examined the Duck and gave me the information. This makes the ninth record for the interior.—RUTHVEN DEANE, *Chicago, Ill.*

The Scarlet Ibis (*Guara rubra*) in Arizona.—When crossing the Rillito about a mile north of old Fort Lowell, with a party of friends, September 17, 1890, en route to Sabina Cañon, I saw a small flock of Scarlet Ibis. There were seven or eight of them. They were standing in the running water and were pluming themselves. The day was hot and fearing if I killed any they would spoil before I could get home with them, I decided not to interfere with them till my return a few hours later. To my great disappointment they were then gone.—HERBERT BROWN, *Yuma, Arizona.*

Notes on the Breeding of the Wilson's Snipe (*Galinago delicata*) in Illinois and Indiana.—With occasional exceptions, northern Indiana is undoubtedly the southern breeding range of the 'Jack Snipe,' yet I do not think it is generally known that many remain, even in this latitude, to rear their young, and the majority of sportsmen, at least, think that

after the spring migration has passed on, no Wilson's Snipe will again be seen until September. It has only been within the past few years that I have appreciated the numbers which must breed along the Kankakee River in Indiana. We know there is no fall migration as early as July and August, and consequently such birds as are killed in those months must be the breeding birds and their young, which at this season do not show any material variation in size or plumage. At English Lake, which is a mere widening of the Kankakee River near the settlement bearing the same name, the water is often sufficiently low in the summer months to expose a considerable territory of mud flats, grown up to cane and wild rice, and it is here that the Snipe congregate during a portion of the day and at night retire to the marshes back from the lake and river. On August 7, 1893, Mr. J. M. Mackay and friend bagged sixty-nine 'Jacks,' and one morning in the latter part of July, 1897, killed forty-two of the same bird.

But few instances of the actual finding of the nests have come to my knowledge. Mr. G. Frean Morcom has a set of eggs in his collection collected on the grounds of the Macsauber Shooting Club, near Davis Station, Indiana, on the Kankakee River, and another nest was discovered by Mr. John Watson of Chicago, a sportsman of large experience in Snipe shooting. He wrote me under date of May 25, 1898: "I found the 'Jack Snipe' nest referred to, on April 24, 1898, near what is known as the 'big ditch,' about two miles south of Davis Station, Indiana. There were three eggs in the nest, large eggs for the size of the bird, and very much tapered at one end, dull white and splashed with black markings. I was within two feet of the nest when the bird flushed and acted as though crippled, lying on the withered grass with extended wings, about ten feet from where I stood. I walked up to her and off she went, and a very lively bird she then was."

I am also indebted to Mr. F. R. Bissell of Chicago, a sportsman well acquainted with the Wilson's Snipe, for information regarding a nest containing four eggs which he found on April 24, 1896, while hunting through meadows some ten miles west of Waukegan, Lake Co., Illinois. On two occasions I have flushed Snipe in Stark Co., Indiana, in April, when their actions were sufficiently suspicious to satisfy me they were nesting in the immediate vicinity, but a thorough search failed to reveal the nests of either.

In most, if not all States the Wilson's Snipe has never been protected at any season, but under a new bill for the better protection of Game Birds and other species, now pending before the legislature of Illinois, this Snipe is given a close season between the 25th day of April and the 1st day of September. It is hoped this may become a law, inasmuch as we know that a considerable number must breed within the limits of the State every year.

A very late record for this Snipe in Illinois is three being shot by Mr. C. J. Spencer on December 24, 1896, at Benton, Ill., in the northeastern

corner of the State. The weather was very cold and everything frozen up except a small space of ground which had been kept soft by the draining of hot water pipes from a stationary pumping engine. These birds had evidently been living on this spot for some time, as they were in good condition.—RUTHVEN DEANE, *Chicago, Ill.*

Columba corensis at Key West, Florida.—On October 24, 1898, an adult female of this species was shot on the Island of Key West, and brought to me in the flesh, by a young collector in my employment, who found it among some Doves in the possession of a dove hunter, who had shot it from a wild fig tree on the outskirts of the town. The skin was sent to Mr. William Brewster, who kindly confirmed my identification, and it is now in his collection.—JOHN W. ATKINS, *Key West, Fla.*

The California Vulture in Arizona.—So far as I know there has been no record made of the California Vulture (*Pseudogryphus californianus*) being in Arizona, and I therefore offer one. In March, 1881, three men, Bill Johnson, Joe Henderson and Miles Noyes, crossed the Colorado River at Pierce's Ferry, Grand Wash Cliffs, northwestern Arizona. At that time the ferry consisted of a row boat attached to a line that extended across the river from bank to bank. In this boat the men crossed with their packs and swam their horses. They camped that night under the high bluffs. Next morning while getting breakfast they observed what appeared to be two Indians watching them from the top of a distant cliff. This at first glance drove the men to their guns, but a more careful examination showed the strangers to be a pair of Vultures. Later they flew almost directly over the camp at an elevation of between 75 and 100 yards. Noyes fired a shot from a model 76 Winchester and struck one breaking its right wing near the body. It struck the boulders on the river bank and was killed by the fall. It was described as being of "a dark brown color with purplish warts on the neck." The men had no rule, so measured it with a gun. It was over a gun length in height and more than three gun lengths in the spread of its wings.—HERBERT BROWN, *Yuma, Arizona.*

Melanerpes erythrocephalus Wintering in Chicago.—Some time since Mr. Brandler called my attention to the fact that there was a single specimen of Red-headed Woodpecker hanging about the shrubbery in Jackson Park. While out for an early walk on the morning of February 17, I had the pleasure of coming on the bird myself as it was clinging to the trunk of the tree close down to the ground, evidently protecting itself from the wind, in the growth of ornamental shrubs. It was all huddled together, with every feather ruffled, and it was a pitiable sight indeed with the thermometer hovering, as it was, about the twenty below zero mark. This is the only instance which has come to my notice of the Red-head exhibiting the hardihood necessary to winter in this local-

ity, though I am told it is seen at rare intervals in the woods sixty miles farther south. — Wm. ALANSON BRYAN, *Chicago, Ill.*

A Bahaman Bird (*Centurus nyeanus*) **Apparently Extinct.** — The only known specimen of this Woodpecker, I shot on Watling's Island, Bahamas, March 5, 1886. He may have been the last of his kind, for although a week was spent on said island, and a great many holes made by Woodpeckers were seen in the dead trees, still all looked old. None seen were fresh. The one this bird flew out of was made in a dead stump, about fifteen feet high and eighteen inches in diameter; the hole was well up towards the top; the location was about a quarter of a mile from the lighthouse then being erected. During the week spent in collecting, not a Woodpecker of any kind was seen or heard on the island. — WILLARD NYE, JR., *New Bedford, Mass.*

The Chuck-will's-widow on Shipboard. — On a steamer from Savanna, Georgia, to New York, in April, 1898, my father and I made some very interesting observations on the Chuck-will's-widow (*Antrostomus carolinensis*). We left Savanna on the 18th of April, and early in the morning of the 19th, when we were about fifty miles from the coast of southern South Carolina, a bird of this species came aboard. My father caught sight of it sailing along a short distance behind the ship, and the next instant it had alighted on the railing of the upper deck not far from where he stood. After sitting there about thirty seconds, it darted downward and disappeared amidst the cargo on the lower deck, and a careful search failed to reveal it.

Several Warblers (*Dendroica striata* and *D. palmarum*), made their appearance during the morning, but the Chuck-will's-widow remained concealed. At two o'clock in the afternoon, however, while we were looking at a beautiful Hooded Warbler (*Wilsonia mitrata*) which had just come aboard, the long sought *Antrostomus* suddenly darted out from the lower deck and flew swiftly away in an easterly direction. We were amazed that it had not started toward land, but thought we had the key to the mystery, when, as the bird began to fade in the distance, it sank closer and closer to the water and at last settled on a wave-top for an instant. The bird seemed to have completely lost its bearings, and found itself too exhausted to fly, and we, thinking that this was the end, returned to our study of the Warbler, which had grown completely tame, and was catching flies at the feet of the passengers. A minute later our eyes lighted on a dark speck in the air off to the eastward, and we soon recognized the Chuck-will's-widow, flying lightly and strongly, and heading toward the ship. In a short time it had reached us, but instead of alighting, it swept over the top deck and kept on over the sea to the westward, and soon disappeared in the distance. This time, however, we expected it back, and sure enough, within three minutes we saw it sailing along over the ocean west of us far ahead of the ship, and flying in a

direction parallel to the ship's course. It soon turned, however, and presently joined us, and from that time on was seldom out of sight for more than five minutes at a time. Sometimes it would dash the length of the hurricane deck, under the awning, and literally fan the faces of the passengers with its wings; and again it would follow in the ship's wake for a few minutes, flying at a height of about forty feet above the water. Occasionally it would rest for awhile on the rigging or top deck, and then be off again over the ocean, coursing about with a free, easy flight, somewhat like that of a Bonaparte's Gull, but with an element of the straightforward flapping and sailing of a Hawk or Owl. We soon learned about how soon to expect it back, after one of its flights, but it was quite as likely to come back from a corner opposite to that in which we had seen it disappear. Occasionally it would drop lightly into the water, as it did when it made the first flight to seaward at two o'clock, and it was evident, that, unnatural as this seemed, it did it for pleasure, and not from exhaustion, as we had previously supposed. Its whole manner was one of complete ease and grace, as though it were a sea-bird, and entirely accustomed to following ships in broad daylight; indeed, it seemed to be more willing to leave the vicinity of the ship for minutes at a time, than any Gull or Petrel. And this was a Chuck-will's-widow, that strictly nocturnal, forest-loving bird, to be found in the daytime only in the hollow of some tree, or on the ground in the shadiest parts of the woods!

At about five o'clock the idea occurred to me that there might be more than one, for although the bird was fully as active in its excursions, often disappearing in the distance, there seemed always to be one near us. Resolved to determine this point, I climbed up to the superstructure, where I could get a good view of the whole ship and surrounding ocean. The Chuck-will's-widow had just come back from an unusually long flight, and had alighted on a rope about ten feet above the deck on which I stood. After watching some time for others, and not seeing any, I tried to see how near I could get to the perching bird. The rope on which it sat was stretched at an angle of about 45° from the deck to a point twelve feet up a mast, and the bird was perched *crosswise* on it a few feet from the top. Beside the mast stood a large ventilating funnel, and by keeping on the opposite side of this, I was enabled to creep up unobserved to within twelve feet of the bird. When I had gotten as near as possible, I cautiously peered out from behind the funnel, and had a good look at a beautiful female Chuck-will's-widow. It was so near that I could see every marking and every slightest motion. Occasionally she would half open her great mouth, as though yawning, and the curious barbed bristles fringing it would vibrate like the antennæ of a moth. Finding that she did not take alarm at my presence, I stepped out from behind the funnel, and got exactly under the bird, but she showed no signs of agitation, beyond opening to her full, her beautiful deep eyes, which up to that time had been half shut. Having studied her as long as

I wished to, I was turning to go, when I saw a second one, closely followed by a third, dash past the bow, and over the fore part of the ship. One of them alighted on the railing of the bridge, while the other kept on over the sea for some distance. From that time on I frequently saw them together, and found that there were two females and one male.

All this happened in bright afternoon sunlight, before half past five o'clock. The following other birds were on the ship at this time. A Palm Warbler (*Dendroica palmarum*), an adult male Hooded Warbler (*Wilsonia mitrata*), a full-plumaged Bay-breasted Warbler (*Dendroica castanea*), a Yellow-winged Sparrow (*Ammodramus savannarum passerinus*), a Catbird (*Galeoscoptes carolinensis*), and a Field Sparrow (*Spizella pusilla*); making, with a Black-poll Warbler (*Dendroica striata*) and some Tree Swallows (*Tachycineta bicolor*) which we had seen in the morning, and the Chuck-will's-widows, nine species of land-birds which had rested on the ship during the day.

As twilight came on, the Chuck-will's-widows spent more time about the ship and less over the water, and we found that they were feeding on large beetles which were flying around over the decks. Suddenly as we were watching one of these birds, an officer of the ship called to us from the other side of the deck: "Did you see that Hawk catch that little bird?" And he then told us that he had seen the 'Hawk' chase one of the small birds out over the sea and swallow it, or at any rate the bird had suddenly disappeared when its pursuer was almost on top of it. A moment later two sailors, who had been on the deck below, came up and asked our informant if he had seen the big bird catch the little one, and when questioned by us, they described it exactly as he had done. Soon afterwards, when I was standing on the superstructure, a Warbler, which I took to be the Hooded, darted past me hotly pursued by a Chuck-will's-widow, and the next instant I plainly saw it seized upon and swallowed, just as if it had been a moth, though its captor seemed to have some difficulty, as I saw it opening and shutting its mouth when it passed me again a moment later. This was our last observation for the day, as it was getting too dark to see clearly.

The next morning was cold and foggy, and I thought that if the Chuck-will's-widows were anywhere on board, they would be hiding in some sheltered corner. Accordingly I hunted the ship over, paying special attention to corners of the lower deck, but found nothing but a Palm Warbler and a Field Sparrow, and was about to give up the search when I suddenly came upon one of the females squatting under a life-raft. She was apparently benumbed by cold, as I was able to get within three feet before she flew, and almost caught her as she dodged out past me from under the raft. She was evidently the only one left on the ship, but whether the others had been caught by the ship's cat, or had flown away, we never learned. The day was unusually cold, about 45° Fahr., and the solitary *Antrostomus* was quite evidently affected by it. There was a marked difference in her actions, for though she occasionally

left the ship of her own accord, she always immediately fell behind, and seemed to experience great difficulty in regaining it.

Each time she left the ship she seemed to have harder work to get back, and at last, when, after a rest of nearly twenty minutes in the shelter of a heap of sail, she once more darted astern, she seemed to find her strength failing, and made a desperate attempt to reach the ship again. After struggling for some minutes, flying with a weak heavy flight, totally different from that of the day before, and all the time losing ground, she finally disappeared in the fog, and we never saw her again.

This was at about ten in the morning of April 20, off northern Virginia.—GERALD H. THAYER, Scarborough, N. Y.

Pinicola enucleator canadensis and **Tryngites subruficollis** in Illinois.—It is seldom, indeed, that Illinois is favored with a visit from the Pine Grosbeak, there being to my knowledge only one previous published record of its occurrence in the State. Mr. Harrison Kennicott (who by the way is a nephew of Mr. Robert Kennicott, whose name is a familiar one among ornithologists) informs me by letter, in which he kindly gives me permission to publish this note, that on the 15th of February, while he was out shooting rabbits in the woods near 'The Grove,' Cook County, he came across an unfamiliar bird among a flock of Juncos, which at first sight resembled a Shrike in form. His first shot brought it down and after careful study of Nuttall's 'Manual' he identified it as a young male Pine Grosbeak. He laid it aside to send in for farther comparison but unfortunately the favorite family cat got hold of it and destroyed it completely, eating everything, even to the head and wings. I believe this may be looked upon as a straggling southern record directly attributable to the exceedingly cold wave which prevailed at that time, being the coldest weather, with a single exception, in the history of the State.

A bird which is perhaps almost as infrequently met with by the ornithologists of the State as the foregoing one is the Buff-breasted Sandpiper (*Tryngites subruficollis*). It was on Sept. 18, 1898, that a head was handed me, then in a macerated condition, which I was able to identify at once as that of *T. subruficollis*. Mr. Chas. Bandler while out shooting Plover the day previous had come on a pot hunter who was roasting his game, consisting of the specimen here recorded and another one (which was mutilated beyond positive recognition, but which was believed to be the same), in his campfire and muttering because of his poor luck. The head, which was all that was available, Mr. Bandler picked up and it is now in the Field Columbian Museum collection, recorded as from Calumet Lake, Cook County, Illinois.—WM. ALANSON BRYAN, Chicago, Ill.

Ammodramus nelsoni in Iowa.—I am unable to find any record of the occurrence of this species in our State and it gives me pleasure to

say that on Oct. 12, 1894, a beautiful adult male accepted an invitation from my gun to join some of his cousins in my collection. The bird was shot in an old stubble field bordering the Iowa River, opposite Regens Park, Iowa City, Iowa, and is entered as number 796 in my catalogue.—PAUL BARTSCH, *Smithsonian Institution, Washington, D. C.*

Nelson's Sparrow (*Ammodramus nelsoni*) at Toronto, Ontario.—On the 22d of September, 1894, whilst I was Snipe shooting near Toronto, I noticed several small Sparrows, flitting out of the rushes before my dogs, whose manner of flight was new to me. Two of these I shot and found them to be of this species,—the first I had ever seen or heard of in the Province. During the remainder of that autumn I kept a sharp lookout for them but saw no more.

On the 10th of June, 1895, I saw a small bird flying up the shore of Lake Ontario from east to west; it was then about thirty yards high, but as it neared the marsh at the eastern end of Ashbridge's Bay, it gradually lowered as if intending to alight. However, I killed it. This was a female with ova about as large as No. 12 shot; in the autumn of that year I saw only two others though I watched for them carefully.

In 1896 I saw only one and that was on the 28th of October. This bird was in a marsh about three miles from where I have seen all the others.

During the autumn of 1897 none appeared until the 9th of October; from that date until the 29th one or more were seen every day but they never became common.

In the autumn of 1898 the first appeared on the 23d of September, when I saw one; on the 24th several were seen, and from that time until the first of October they were quite common; on some days I must have seen fifty or sixty of them.

They frequent just one spot in the marsh and are, owing to their secretive habits, rather difficult to find; when driven out of one clump of rushes they fly a few yards and drop into another, which affords them perfect concealment. I have not yet heard one of them utter a call note or a chirp of any kind.

Since I first saw them I have looked for them continually through the spring and summer months, but with the exception of the female taken on the 10th of June, 1895, I have failed to find any.—C. W. NASH, *Toronto, Canada.*

Capture of the Black Seaside Finch (*Ammodramus nigrescens*) in 1889.—Mr. Chapman's note on this species (Auk, XV, 1898, p. 270) states that it had not apparently been met with since its discovery in 1872, by Mr. Maynard, till found by himself in 1898. It hence gives me pleasure to report my capture of a pair near Indianola, Florida, March 3 and 5, 1889. Indianola is situated almost opposite Cocoa, on Merritt Island. While

hunting Wilson's Snipe, along the border of a stretch of stiff marsh grass on the swampy shore of Banana River, a small bird started up in front of me and, fluttering over the top of the grass, had the appearance of a Wren, but its black plumage gave me full assurance that *Ammodramus nigrescens* was within reach of my gun. Changing cartridges, I soon had the pleasure of holding in my hand this highly valued prize. Snipe shooting was now out of order, but several hours' search for the Finches proved fruitless. On March 5, I had the good fortune to collect another Black Seaside Finch, apparently the mate to the one taken two days before.

Several additional visits to the same and other near localities did not reveal the presence of any more of these birds. Some days after taking the specimens already mentioned we made a trip to the shore of the Banana River, about eleven miles north of Indianola, a native of Merritt Island having assured us that we would find this little black Sparrow there in quantity; but our bright anticipations were doomed to disappointment.

Several years later, when again on the island, I had the pleasure of starting another specimen, a few miles east of Indianola, midway between Indian and Banana Rivers. While in the act of raising my gun my feet were suddenly entangled with a large moccasin, and a glance at this loathsome object seemed sufficient reason for letting my coveted Sparrow escape.

The two I took in 1889 were a pair, male and female, and have afforded me especial pleasure when looking over my collection of birds. The male is darker throughout than the female, with the markings on the under parts stronger and more conspicuous.—AUGUST KOCH, Williamsport, Pa.

Song Season of the Cardinal (*Cardinalis cardinalis*).—The following is a record of the days on which I have heard the Cardinal sing, since January, 1896. I think it is a full one, as there has hardly been a week that I have not been in the haunts of the bird, and the song also is one that is not likely to be overlooked.

The record was taken in the vicinity of Anderson, S. C. [See Table, pp. 279 and 280.]—J. ROWLAND NOWELL, Anderson, S. C.

Piranga rubra not Preoccupied.—Mr. Gerrit S. Miller, Jr., has kindly pointed out an error of statement in regard to the names of Tanagers published by the present writer in the last number of 'The Auk.' The remark is there made that Vieillot used the combination *Piranga rubra* for the Scarlet Tanager, thus precluding its subsequent employment for the Summer Tanager. As a matter of fact, however, Vieillot's *Piranga rubra* (Ois. Am. Sept., I, 1807, p. iv, pl. I, fig. 12) is not the Scarlet, but the Summer Tanager, as examination of his references and figure

SONG SEASON OF THE CARDINAL.

SONG SEASON OF THE CARDINAL (*Continued*).

clearly demonstrates. This mistake arose from taking Professor Baird's identification of Vieillot's *Piranga rubra*,—P. R. R. Rep., IX, 1858, p. 300, where he cites it as a synonym of the bird now known as *Piranga erythromelas*, in which course he has been followed by some other authors. Further comment is unnecessary; and the two birds in question remain in undisputed possession of their present names.—HARRY C. OBERHOLSER, *Washington, D. C.*

Clivicola versus Riparia.—In 'The Auk' for July, 1898, pages 271-272, Dr. Coues draws attention to the fact that the generic name *Riparia* Forster (Synop. Cat. Brit. Birds, 1817, 17) has page priority over the current *Clivicola* Forster (*ibid.*, p. 55); at the same time expressing his preference for the adoption of the former. The A. O. U. Committee, however, refused to accept *Riparia* on the ground that *Clivicola* was used by the 'first reviser.' These two names are founded upon the same species and are both unaccompanied by diagnoses, so that there can be no question of their equal pertinency. Canon XVIII of the A. O. U. Code, which treats of generic terms published simultaneously, makes no definite provision for just this kind of a case; but in the preceding canon, with regard to specific names, the following occurs: "Of names of undoubtedly equal pertinency, and founded upon the same condition of sex, age, or season, that is to be preferred which stands first in the book." Therefore, unless we are to have on this point arbitrarily different rules for species and genera, a procedure apparently both unnecessary and undesirable, *Clivicola* must give way to *Riparia*. That the above quoted principle of page priority was intended to apply to genera as well as to species is evidenced by rulings of the Committee; as witness *Guara*, instead of *Leucibis*, which was adopted by the 'first reviser'—a perfectly parallel case.

While recourse to the decision of the 'first reviser' is often attended by more or less uncertainty, arising from the possibility of overlooking some obscure publication, the great advantage in the strict application of the principle of anteriority, as priority of pagination or sequence in the same book may be called, is that it furnishes means for a definite and final decision, thereby contributing to hasten on the millennium of zoölogical nomenclature—stability of names.—HARRY C. OBERHOLSER, *Washington, D. C.*

Nest of Long-billed Marsh Wren lined with a Snake Skin.—On June 6, 1898, on the meadow near Rutherford, New Jersey, I found a curious nest of *Cistothorus palustris*. It was fastened two feet above the water, to some green cat-tails, and was composed of reeds and broad grasses, and lined with a cast-off snake skin which was about a foot long. It contained six fresh eggs.—JOSIAH H. CLARK, *Paterson, N. J.*

The Short-billed Marsh Wren (*Cistothorus stellaris*) in Maine.—In Smith's List of the Birds of Maine (*cf.* Smith, Forest and Stream, Vol.

XIX, p. 445) this species is credited to Maine upon the strength of nests and eggs said to have been taken near Bangor. In my recently published list (*cf.* Knight, List of Birds of Maine, p. 141) the species in question is hypothetically included upon Mr. Smith's evidence, and upon the belief that I had seen the species in a marsh near this city, though at that time I had not secured any specimens.

May 30, 1898, I secured an adult male of this species, in full breeding plumage, which has already been recorded (*cf.* Knight, Maine Sportsman, Dec. 1898, p. 8). This specimen was secured in a low, somewhat bushy meadow within two miles of the Bangor postoffice, the locality being the same where I thought I had seen the species during the late summer two or three years previously.

On the day when this specimen was taken, I was returning from a short outing, and when passing the meadow a gust of wind brought to my ear the notes of an unknown song uttered in a key that seemed dimly familiar. Again the notes were heard as I stood eagerly listening, and then my mind was carried back to the sage-clad hills of southern California where oft I had stood and listened to the echoing notes of the Pallid Wren Tit, similar, yet still far different from those just heard.

Again and yet again the song was heard in different directions, and soon the musicians, five Short-billed Marsh Wrens, were located in different portions of the meadow. While singing they seemed to perch conspicuously on the tops of low bushes, but on being approached they would descend into the tangled growth of sedges and skulk along in advance of me, uttering a low grating note of alarm or defiance.

The females seemed quieter and kept out of the way, though two individuals were seen which seemed, judging by the attention paid them by what were probably their mates, to belong to the gentler sex.

The specimen secured was judged to be a male and on dissection proved of this sex. For several days thereafter I frequented the locality in hopes of finding nests or eggs, but though the birds remained all summer I was unable to get proof positive that they nested, but of course they did so. My departure for California in mid-August put an end to further observations for the season.

A second specimen, also a male, had been secured on July 3. On comparison with individuals loaned me by Mr. Brewster, which were taken near Cambridge and elsewhere in Massachusetts, the Bangor birds were found practically identical in coloration and measurements.

The specimens were also compared with a series of birds from the U. S. National Museum collection, loaned me through the kindness of Prof. Ridgway, and found to be practically undifferentiable from any of these save two very pale-colored examples from Dakota.

Judging by the series examined, our eastern specimens are all referable to the only recognized race now on our list. Examples from the regions bordering the Plains are considerably paler in coloration, especially on the back, and study of a series of breeding birds from the West may show

sufficient differences to make advisable their separation as a subspecies.—
ORA W. KNIGHT, *Bangor, Me.*

A Provident Nuthatch—Visiting Central Park on the morning of November 28, 1898, after a snowfall of $9\frac{1}{2}$ inches, I carried a quantity of bread for the birds, and nuts for the squirrels. The squirrels did not appear until nearly noon, but the birds were quite ready for breakfast at 9:30 A. M. While crumbling bread for the White-throated Sparrows, who were exceedingly hungry and gave loud calls of delight, summoning their friends to the spot, a fine Fox Sparrow came and ate greedily.

In a few moments a White-breasted Nuthatch came and hopped about on a tree trunk, calling, *younh, youh, youh*, rapidly, as if greatly pleased, then he flew to the snow, seized as large a piece of bread as he could carry, and flew high up in a tree some distance away. I expected to see him eat it, although in all my experience with birds in bad weather I had never seen a Nuthatch eat bread, though they often eat bits of nuts thrown to them, and are very tame. This wise fellow hunted till he found a suitable cranny, then poked in his bread, and hammered it down several times with his bill. When he got it well stored, he went back to the tree near me, calling *younh, youh*, as if to say, "more please." Then I threw him a piece of pecan nut in the shell, and he took it at once, flew to another tree and looked till he found a hole, hammered it down as he did the bread, and returned for more. After the operation had been repeated many times, I was forced to walk and warm my feet, for the birds were so fascinating I had stood an hour in the snow.

Returning to the spot sometime afterward, the White-throats were singing, and the Fox Sparrow was tuning up too. As they were still feeding, I crumbled more bread, and soon the Nuthatch reappeared, and at intervals carried off pieces of nuts, storing each in a separate tree.

When my bread and pecans were distributed, I walked away and found some squirrels and gave them chestnuts. Mr. Nuthatch appeared again, and came low down on a vine, hanging his head off sideways, and calling loudly to attract attention. I threw him half a chestnut which he took immediately, and after a long search found a safe place in a cherry tree. He went off awhile, but later returned and took a whole chestnut and went so far I lost sight of him. I walked away and returned in a half-hour to the place. The Nuthatch came again and called, and took chestnuts several times and hid them.

Since writing the above the Nuthatch appeared on three consecutive days, and took bread and nuts many times and hid them. Unfortunately a friend and I saw a squirrel find his cache, and rob him twice.

Can any reader tell me if it is possible for Nuthatches to store their treasures where squirrels cannot get at them?—F. HUBERTA FOOTE,
New York City.

The Carolina Wren Breeding in Rhode Island.—On May 11, 1899, I found in Middletown, R. I., a male Carolina Wren (*Thryothorus ludovicianus*) and three young ones just able to fly. As they were together when I found them they no doubt belonged to the same family and, from the age of the young, could not have been far from their nest. As the bird is rare here, the above may be of interest to the readers of 'The Auk.'—EDWARD STURTEVANT, *Newport, R. I.*

Food of the Robin.—On May 15, 1899, while collecting at Onondaga Valley, N. Y., I noticed a nest and young of the Robin (*Merula migratoria*). As I stood near watching the nest the mother bird appeared with a mouthful of larvæ of *Clisicampa* (probably *C. americana*) which she fed to the young. After she had fed to her young the mouthful of larvæ she returned to a near-by apple tree and obtained more. The larvæ seemed to be nearly full grown, and it seems strange that the Robin should be feeding them these hairy caterpillars. This is the first instance I have known of any bird feeding on them except the Cuckoo.—A. W. PERRIOR, *Syracuse, N. Y.*

Two Rare Birds for Southern Ohio.—The extremely cold weather of this winter brought us two very rare visitors. One was the American Rough-legged Hawk (*Archibuteo lagopus sancti-johannis*), a pair of them being taken, one on Feb. 5, the other on Feb. 17. I could not secure either one for my collection. Dr. Wheaton states this Hawk to be rare in southern Ohio, mentioning but one specimen from Columbus and one from Cincinnati. But Waverly is 100 miles east of Cincinnati and 70 miles south of Columbus.

The other visitor was the Old-Squaw (*Harelda hyemalis*). Between Feb. 7 and 18 nine specimens, four males and five females, were taken by local hunters. I secured a fine pair for my cabinet. This is the southernmost record of this species for the State.—W. F. HENNINGER, *Waverly, O.*

Some Rare Occurrences in Yates County, N. Y.—*Larus marinus*, GREAT BLACK-BACKED GULL.—On April 18, 1898, there was a great influx of American Herring Gulls at this place and with them were about fifteen individuals of *Larus marinus*. One specimen was shot and brought to me for identification. They remained here about one week.

***Larus delawarensis*, RING-BILLED GULL.**—A rare migrant, one specimen taken during the spring of 1894.

***Larus philadelphia*, BONAPARTE'S GULL.**—About 500 of these gracefully manœuvring Gulls appeared on April 21, 1898, and remained about ten days. Several specimens were taken in both the mottled and full plumage.

***Sterna antillarum*, LEAST TERN.**—A rare migrant in the autumn. I

saw three specimens on Sept. 6, 1896, and secured one. They disappeared on Sept. 11.

Aythya vallisneria, CANVAS-BACK.—During the first week of December, 1897, Canvas-back Ducks began to appear in couples and small flocks and by the middle of January the local sportsmen estimated that there were about 200 flocked in this end of the lake (Kevka). However, a week's despicable night shooting soon drove them away. Old sportsmen inform me that these were the first Canvas-backs that they had seen in about fifteen years.

Phalaropus lobatus, NORTHERN PHALAROPE.—Rare migrant. I took one specimen on May 16, 1895.

Tringa fuscicollis, WHITE-RUMPED SANDPIPER.—On Sept. 29, 1898, I found a mortally wounded specimen along the lake shore and two more were seen. As near as I can find out this is the first record of the occurrence of the White-rumped Sandpiper in Yates County or adjoining counties.

Calidris arenaria, SANDERLING.—One specimen, taken in the autumn of 1893, and another on May 25, 1895.

Asio wilsonianus, AMERICAN LONG-EARED OWL.—The occurrence of this Owl is not common and it is a rare breeder. Several nests have been found—the last one on May 16, 1897. It contained four eggs almost hatched.

Icteria virens, YELLOW-BREASTED CHAT.—Of rare occurrence in this county. On May 30, 1898, I found a pair breeding in the edge of a swampy bush lot. The nest contained two eggs that were destroyed for some reason—probably because I disturbed the sitting female.—CLARENCE FREEDOM STONE, Branchport, N. Y.

Family and Subfamily Names Based on Subgenera.—The purpose of the present note is to raise the question of the tenability of family and subfamily names based on subgeneric terms. Current usage appears to favor the formation of the family or subfamily name from some valid generic term in the group, and Canon V of the A. O. U. Code has the following to say upon the subject: "Proper names of families and subfamilies take the tenable name of some genus, preferably the leading one, which these groups respectively contain, with change of termination into *idæ* or *inæ*. When a generic name becomes a synonym a current family or subfamily name based upon such generic name becomes untenable." So far as the literal interpretation of this canon is concerned, there seems to be no provision for the case in hand, since a subgeneric name, so long as employed in that capacity, can be strictly considered a synonym of a generic term, no more than can a subspecies be considered synonymous with its particular species; but the intent of the canon is evidently to consider subgeneric names ineligible for use as the basis of supergeneric terms, as is manifest in the 'Code' from the remarks which follow this canon. On the other hand, in the interest of the

utmost possible stability for names of higher groups, it may be contended to be inadvisable to change family or subfamily names which have been founded upon generic terms now held as subgeneric; while still restricting the proper formation of such names to terms which have generic rank at the time of such formation.

If the former, however, be the proper view, it is in order to inquire why we still retain the family name Podicipidæ for the Grebes, while *Podiceps* continues to hold but subgeneric rank. The proper name for the group is probably Colymbidæ, as has already been announced by Dr. Stejneger (Stand. Nat. Hist., IV, 1885, p. 66). By the same criterion Phalerinæ is untenable, being based upon *Phaleris*, a subgenus of *Simorhynchus*, and if it be still deemed advisable to retain a subfamily distinction apart from the Fraterculinæ, may possibly best be called Simorhynchinæ. Then, too, so long as *Fuligula* stands only as a subgenus, the subfamily designation Fuligulinæ must be displaced. There are, however, structural characters quite sufficient to entitle *Fuligula* to full generic rank,—characters too well known to require enumeration in this connection, and which now receive due recognition almost universally except among American ornithologists. — HARRY C. OBERHOLSER,
Washington, D. C.

'Revival of the Sexual Passion in Birds in Autumn.'—In addition to the notes of Messrs. Brewster and Chapman which have lately appeared in 'The Auk' on the above subject the following observations may be of interest. From my Journal for September 2, 1898, Jamestown, R. I., I copy the following:—"This morning a number of Purple Martins (*Progne subis*) were seen alighting on the rigging of the small boats anchored in the harbor, they being not uncommon here early in September; later in the morning they were in good numbers (15 or 20 birds) along the roadsides in company with the Tree Swallows. The Martins almost always alighted on the cross bars of the telegraph poles, rather than with the Swallows on the wires. While I was watching two birds, supposedly young, they were seen a number of times to go through the actions of copulation."

Another record was made on September 15, 1898.—"While sitting in the blind (Jamestown, R. I., Round Marsh) a Sharp-tailed Sparrow (*Ammodramus caudacutus*) came and lit near by and performed some interesting antics. The bird would now and then utter a few hurried notes, run a few feet and jump excitedly into the air. The bird also from time to time (five times) went through the actions of copulation on a little, cropped off tussock of grass about the size of its body. I was within a few feet of the bird, being protected by the blind, and am positive that its actions were those of copulation. Possibly this bird was mentally deranged. I took the bird and found it to be a young male, its sexual organs of normal size for that time of season. Two interesting questions present themselves. Is the accompanying non-enlargement of

their sexual glands due to their being still non-functional, or is the passion caused by simple sensory, nervous excitement? Is the autumn song period, of some species, correlated with this passion?

The species of birds that have now been recorded, as far as I know, as showing this autumn habit, include the Bluebird, English Sparrow, Bank Swallow, Tree Swallow, Eave Swallow, Barn Swallow (?), Purple Martin and Sharp-tailed Sparrow, and I have no doubt that further observation will add many other species to the list.—REGINALD HEBER HOWE, JR., *Longwood, Mass.*

Émigration accidentelle d'oiseaux.—Un fait rare vient d'appeler notre attention à Guanajuato. Pendant les premiers jours du mois de mars ont apparu subitement des bandes de perroquets (*Chrysotis levaillantii*) aux alentours de Silao à vingt kilomètres de Guanajuato. Un peu plus tard ils se sont encore rapprochés de nous à 4 ou 5 kilomètres dans un ravin, et ensuite à une grande ferme appelée Santa Teresa entre Silao et Guanajuato: enfin on les a vues dans les jardins de Marefil à six kilomètres d'ici.

Ces perroquets étoient accompagnés de nombreuses tourterelles violettes (*Columba flavirostris*).

Or ces oiseaux n'habitent que les régions chaudes de Vera-Cruz et de la Huaxteca Veracruzana.

Dans l'État de Guanajuato on ne cultive presque par les fruits de terre-chaude, de sorte que ces oiseaux, ne rencontrant pas leurs aliments habituels, ont dévoré les limons doux, les avocats et quelques autres fruits. A Santa Teresa ils se sont abattus sur un champs de luzerne qu'ils ont dévasté au point qu'on a été obligé de faire une battue pour les d'étruire ou les éloigner. Ils se sont en allés vers la fin de mars.

Il paraît que ces oiseaux ont été vus en grande quantité dans quelques points de l'État de Mexico.

Or il y a en une cause à cette extraordinaire émigration; la voici.

Le 12 du mois de février dernier de fortes gelées et une neige assez abondante ont été observées précisément dans cette Huaxteca Veracruzana: le maïs, les bananières, les arbres fruitiers en général, ont été complètement détruits, de sorte que le froid et le manque d'aliments a forcé les oiseaux en question à chercher un climat plus favorable, et les ont rejettés vers les plateaux du centre. La perte de café surtout a été presque complète de sorte que le grain qui valait 9 piastres les 14 kilogrammes, s'est vendu à 14 piastres. La canne à sucre a été aussi en grande partie détruite. En somme on calcule à près d'un million de piastres la perte totale: jusqu'aux racines des arbres fruitiers, tout a gelé.

Un autre phénomène analogue mais du à une cause tout-à-fait contraire, s'est manifesté au nord de l'État de Guanajuato. Les perroquets et autres oiseaux¹ entre le nord de l'État de Vera-Cruz, le sud-est

¹ Se sont répandus dans les provinces de cette région.

de celui de San Luis Potosi et le nord-est de Guanajuato, les forêts de la Huaxteca Potasina ont pris feu : l'incendie s'est propagé assez rapidement, et les perroquets et autres oiseaux, fuyant devant elle, sont arrivés en bandes considérables, produisant partout les mêmes dégâts.

J'ai pensé que cette observation, toute accidentelle qu'elle est, pourrait intéresser l'Union des Ornithologistes qui s'occupe avec tant l'intérêt de tout ce qui a rapport aux oiseaux.—O. DUGÈS, *Guanajuato, Mexico.*

RECENT LITERATURE.

Elliot's Wild Fowl of North America.—Mr. Elliot's 'Wild Fowl,' as explained on the title page,¹ includes the Swans, Geese, Ducks, and Mergansers of North America, and is uniform in style of publication and method of treatment with his 'North American Shore Birds' and his 'Gallinaceous Game Birds of North America,' published respectively in 1895 and 1897, and reviewed at length in the pages of this journal (XIII, 1896, pp. 64-67, and XV, 1898, pp. 63-65). These three volumes, well illustrated and tastefully printed, include practically all of the so-called Game Birds of North America. They are designed as popular handbooks, for the sportsman and general reader. An account of the habits and haunts of each species is given under its English name; this is followed, in smaller type, by its approved technical name, without synonymy or bibliographical references, and a few paragraphs giving in plain language a description of the bird in its various phases of plumage, and its geographical distribution.

In a preface of six pages the author makes a fervent protest against the wholesale, indiscriminate and unceasing slaughter of these beautiful and economically highly important species, which has been their fate till

¹ The | Wild Fowl | of the | United States | and | British Possessions | or the | Swan, Geese, Ducks, and Mergansers | of | North America | with accounts of their habits, nesting, migrations, and dispersions, together with descriptions of the adults and young, and keys for the ready identification of the species | A book for the Sportsman, and for those desirous of knowing how to | distinguish these web-footed birds and to learn | their ways in their native wilds | By Daniel Giraud Elliot, F. R. S. E., etc. | . . . [8 lines of titles of the author's previous works, etc.] | With sixty-three plates. | New York | Francis P. Harper | 1898—8vo, pp. i-xxii + 19-316, frontispiece and 63 half-tone plates.

only a few, comparatively speaking, yet remain. As he says: "From the time the birds leave the frozen Northland, until the survivors return to it again in the ensuing year, the hunted fowl run the gauntlet of a nation in arms; and no sooner do they pass the boundaries of the land they seek in the spring for the purpose of reproduction, than the natives continue the slaughter of the birds until they depart for southern climes. Is it any wonder that their numbers are diminishing; is it not rather a wonder that so many are left?"

In an 'Introduction' of six pages the author gives an excellent summary of the leading characteristics of the Duck tribe in general. The 'keys' and other technical matter are relegated to a 40-page Appendix, where also various points of nomenclature and classification are considered. He gives his reasons (which are further elaborated in this number of 'The Auk,' pp. 226-229) for placing all of the Swans in the genus *Cygnus*, and for rejecting *Olor* as untenable. He also claims the tenability of the genus *Exanthemops* for Ross's Goose, and refers the Wood Duck to the Old World subfamily *Plectropterinae*, where we think it quite as much out of place as it is in the *Anatinæ*. His claims for *Exanthemops* are quite in harmony with his view of genera among the Water Fowl, for he has not only raised all of the groups formerly recognized in the A. O. U. Check-List as subgenera to the rank of full genera, but also separates generically the Canvas-back from the Redhead. He also adopts various emendations of names previously proposed by the 'good spellers.'

The 63 full-page plates are mostly, as in the previous volumes of this series, by Edwin Sheppard, but four are by the late John Wolf, and quite a number by the author, in each case reduced by Mr. Sheppard from larger drawings. There is also a frontispiece, giving a very good likeness of the author.

As the author has had a wide experience with the birds in life of which his books treat, much of what he has to say of their habits and distribution is given from personal knowledge. -- J. A. A.

Thompson's 'Wild Animals I have Known.'¹—Of the eight charming stories brought together and beautifully illustrated under the above title only two, 'Silverspot' and 'Redruff,' relate to birds. But the ornithologist who once takes the book in hand will doubtless find its pages, with their effective illustrations, too fascinating to wish to lay it finally aside till all have been read. The 'stories' are, as described in the title page, 'personal histories' of animals Mr. Thompson has studied in life, and

¹ Wild Animals I have Known and 200 Drawings. By Ernest Seton Thompson. Being the Personal Histories of Lobo, Silverspot, Raggylug, Bingo, The Springfield Fox, The Pacing Mustang, Wully, and Redruff. Charles Scribner's Sons, New York, 1899. 8vo, pp. 358.

if, as in the case of some of them, the principal hero is composite, the facts are as observed, and to many, with Mr. Thompson's interpretation of motive and purpose, these animals, whether bird or beast, will seem more human in their intelligence, sympathies, and means of communication than is generally believed. In detailing "the real personality of the individual" Mr. Thompson gives us an insight into the real life of a species which any amount of description of the ways of a species as a species would never convey. 'Silverspot' is a Crow, distinguishable from other Crows by an albinistic mark on the side of the face, and the history of this individual as a distinct personality is a most telling way of placing before the reader the 'inner life,' so to speak, of the Crow tribe in general. The same is true of 'Redruff,' a Partridge of distinguished size and mean. In the lives of these 'dumb creatures' there is something pathetically human, that appeals to the reader's sympathies, and shows how much there is in man and beast that is shared in common. The marginal illustrations that cluster about the small type-bed of the pages are as suggestive and appropriate as can well be imagined, while the narrative is graphic, simple, and hence effective. In every way the book is something out of the ordinary, and as pleasing as it is original. — J. A. A.

Stone on the Types of Birds in the Collection of the Academy of Natural Sciences of Philadelphia. — Under this title¹ Mr. Stone gives us a very interesting historical sketch of the Ornithological Collection in the Museum of the Academy of Natural Sciences of Philadelphia, — perhaps still the most noted of any in this country, — followed by a detailed descriptive account of the type specimens of the birds it contains, arranged under the names of the authors of the species. In 1857, this collection was regarded, by so eminent an authority on the subject as Dr. Sclater, as the most perfect then in existence. As Mr. Stone has already given the readers of 'The Auk' (April, 1899, pp. 166-177) the history of this collection, — how and whence it was gathered, and the elements constituting its greatness, — which is more briefly and statistically presented again here, we need not dwell upon this phase of the subject.

In 1897 this collection contained 43,460 specimens, including the types of about 350 species. Respecting the early American ornithologists, it is of interest to note that these include types of two of Alexander Wilson's species; 5 of C. L. Bonaparte's; 8 of J. K. Townsend's; 8 of Audubon's; 3 of Nuttall's; 9 of William Gambel's; 1 of Edward Harris's (the only species he described); 2 of George A. McCall's; and 3 of Dr.

¹ A study of the Type Specimens of Birds in the Collection of the Academy of Natural Sciences of Philadelphia, with a brief History of the Collection. By Witmer Stone. Proc. Acad. Nat. Sci. Phila., 1899, pp. 5-62.

Heermann's. There are types of about 160 of Cassin's species, and 9 of Peale's, and types of one or more species of some twenty other American ornithologists, besides types of many species (about 110) described by foreign ornithologists of note.

Not only has Mr. Stone given a list of the types in the Museum of the Academy, but in the case of species described in the Academy's 'Proceedings,' especially if North American, also the location of the types when not in the Academy's collection, if extant, and if believed to be not extant, this fact is also stated. The paper is thus an especially valuable one, and one involving great labor, for which Mr. Stone is entitled to the gratitude of his fellow ornithologists. —J. A. A.

New North American Birds.—During the last few months Mr. Bangs and others have described several new species and subspecies of North American birds. Mr. Bangs has separated the Barred Owl of Texas, heretofore of late referred to *Syrnium nebulosum allenii* of Florida, as *S. n. helveolum*,¹ on the ground of its general lighter coloration. The Spruce Grouse of Labrador he has likewise described as *Canachites canadensis labradorius*,² basing the form on slight differences of coloration, more pronounced in the female than in the male. He has also characterized a new Rail from Southern California as *Rallus levipes*,³ allied to *R. obsoletus* and *R. beldingi*, from which it differs in being smaller, and also somewhat in coloration.

Mr. Brewster has described a new Clapper Rail from the South Atlantic coast as *Rallus crepitans waynei*;⁴ a comparison of Georgia and East Florida birds with those from New York and New Jersey showing that the southern form is much darker, the underparts more ashy, and the under tail-coverts with fewer markings.

Mr. W. H. Osgood has given a new name, *Chamæa fasciata phœa*,⁵ to the form of Wren-Tit which has of late been regarded as true *C. fasciata*. The type of *C. fasciata* appears to have come from southern California, and hence *C. f. henshawi* is a synonym of true *fasciata*, the darker northern form being here named *C. f. phœa*. —J. A. A.

¹ A New Barred Owl from Corpus Christi, Texas. By Outram Bangs. Proc. New Engl. Zoölogical Club, Vol. I, pp. 31, 32. March 31, 1899.

² The Labrador Spruce Grouse. By Outram Bangs. *Ibid.*, pp. 47, 48. June 5, 1899.

³ A New Rail from Southern California. By Outram Bangs. *Ibid.*, pp. 45, 46. June 5, 1899.

⁴ An Undescribed Clapper Rail from Georgia and East Florida. By William Brewster. *Ibid.*, pp. 49-51. June 9, 1899.

⁵ *Chamæa fasciata* and its Subspecies. By Wilfred H. Osgood. Proc. Biol. Soc. Washington, XIII, pp. 41, 42. May 29, 1879.

Bangs on the Subspecies of *Manacus manacus*.¹—Mr. Bangs here recognizes four subspecies of the *Manacus manacus* group, two of which are described as new, mainly on the basis of differences of size and in the color of the ventral surface. They are (1) *Manacus manacus* (Linn.), type locality, Surinam; (2) *M. m. abditivus*, subsp. nov., type locality, Santa Marta, Colombia; (3) *M. m. purus*, subsp. nov., type locality, Santarem, Brazil; (4) *M. m. gutturosus* (Desm.), type locality, unknown, but assumed to be southeastern Brazil.—J. A. A.

Schalow on Birds from Chili, Patagonia, Tierra del Fuego and the Falkland Islands.—This is an annotated list of the birds collected by Prof. Plate² in Chili, Juan Fernandez, Patagonia, Tierra del Fuego, and the Falkland Islands, numbering 148 species, and it supplements to an important degree the work of former naturalists in the same general region. The known range of a number of species is considerably extended, *Querquedula discors* being recorded from Chili, its previous furthest known limit being Lima, Peru; and two species are for the first time recorded from Patagonia, and twelve are added to the Tierra del Fuego list. Mr. Schalow believes that the examples of various species of northern Limicola, as *Limosa hudsonica*, *Numenius hudsonicus*, *Tringa canutus*, *Calidris arenaria*, etc., which are met with during migration in Argentina, are not migrants from breeding stations in northern North America, but from breeding stations in Tierra del Fuego, Patagonia and the Falkland Islands. The extended annotations relate to the habits and distribution of the species in the area under consideration, and to the color of the eyes, feet, etc., in life, as noted by the collector. In many instances the nests and eggs of the species are described.—J. A. A.

Salvadori and Festa on the Birds of Darien.³—This valuable contribution to our knowledge of the distribution of the birds of the Isthmus of Panama is based on the collections and field notes of Dr. Festa, made chiefly along the Rio Tuyra and Rio Copunate in 1895. The list numbers 123 species, one of which *Rhamphocælus festæ*, has been described as new. *Guara alba* is recorded for the first time from the Isthmus of

¹ On the Subspecies of *Manacus manacus* (Linn.). By Outram Bangs. Proc. New Engl. Zoöl. Club, I, pp. 33-37. March 31, 1899.

² Die Vögel der Sammlung Plate. Von Herman Schalow. Zool. Jahrb., 1898, Suppl., Fauna Chilensis, IV, Drittes Heft., pp. 641-749, pl. xxxvii, xxxviii.

³ Viaggio dei dott. E. Festa nel Darien e regioni vicine. Uccelli. T. Salvadori ed E. Festa. Boll. dei Musei di Zool. ed Anatom. comp. della R. Università di Torino, XIV, pp. 1-13, Marzo 1899.

Panama and *Amazona inornata* is for the first time reported from the western side of the Isthmus.—J. A. A.

Harvie-Brown's Color Code.—At the meeting of the International Congress of Zoölogy, held in Cambridge, England, in August, 1898, Mr. J. A. Harvie-Brown read a communication entitled 'On a Correct Colour Code, or Sortation Code in Colours, to serve for mapping the Zoological Regions and Sub-Regions of the World, and also to be of use as an Eye-Index for Librarians,' an abstract of which appears in the 'Proceedings' of the Congress (pp. 154, 155). The abstract gives a list of the zoögeographical areas he has adopted, with a list of the colors used for their designation. He adopts two 'Realms,' an Arctic and an Antarctic, the former being divided into six 'Regions,' each of which is subdivided into 'Sub-Regions.' It is intended also to apply the color scheme to the binding of books, and to the edges of library shelves. This is apparently a revival or an extension of a color scheme formerly more or less in vogue for labels for specimens, where the color of the label was made, in the case of recent life, to indicate the geographical area of their origin, or, in the case of fossils, the geological formation from which they were obtained, but which of late seems to have been generally abandoned. For the convenience of those who wish to use Mr. Harvie-Brown's scheme, he gives, attached to his separates, the names of several London dealers who offer to supply the necessary materials for book-binding, etc., in the colors desired.—J. A. A.

Howe's 'On the Birds' Highway.'¹—This handsomely printed little book consists of fourteen chapters and, in an appendix, four local lists, without annotation, of birds found at "localities treated in the body of the book." The chapters bear such titles as 'Winter Birds,' 'December by Land and Sea,' 'On the Sands of Ipswich,' 'Late Summer in the Adirondacks,' etc., and are, for the most part sketches of various ornithological excursions, of a very common-place order, from the standpoint of either ornithology or literature. The full page half-tones are chiefly views of scenery, though a few are ornithological, the one of chief interest in this respect being an Osprey's nest built on the top of a pole. The text figures are nearly all reproductions of photographs of mounted birds, good for their kind, though often lacking in sharpness. A colored plate of 'Our Friends the Chickadees,' by Mr. Fuertes, and the excellent typographical make-up of the book are the features entitled to praise.—J. A. A.

¹On the | Birds' Highway | By | Reginald Heber Howe, Jr. | With photographic Illustrations by the Author and a | Frontispiece in color from a painting by | Louis Agassiz Fuertes | [Vignette] Boston | Small, Maynard & Company | 1899.—12mo., pp. xvi + 175, 14 full-page illustrations and 45 text cuts.

Economic Relations of Birds to Agriculture.—In this address¹ Prof. Beal gives a general review of the subject in which he very candidly presents the facts in the case as now known. These he summarizes as follows: “(1) Birds are not by the nature of their food habits, as a rule wholly beneficial; nor, on the contrary, entirely harmful. They eat insects because they are hungry, and not because they wish to destroy a pest; and consequently devour good insects with the bad. (2) That not all of the good done by birds is accomplished by the destruction of insects. Many species perform an almost incalculable service by destroying noxious weed seeds. . . . (5) That in view of the abnormal abundance of noxious insects and the accompanying decrease in our native birds it is for the present desirable that the numbers of the latter be largely increased. . . . (7) That it is not desirable to import foreign species of birds to this country. Such experiments, wherever they have been tried, have almost invariably resulted in disaster and loss to the interests of agriculture.”

Bearing on the same general subject is Dr. Judd’s paper on ‘Birds as Weed Destroyers,’² in which is discussed at some length the services birds render through the destruction of the seeds of troublesome weeds. The species most active as weed destroyers are of course the Finches and Sparrows, of which there are some twenty species, and the various Larks, Blackbirds, Doves and Quails. Several of these are figured, as well as some of the weeds they help to hold in check. “No less than fifty different birds act as weed destroyers, and the noxious plants which they help to eradicate number more than three score species.” Dr. Judd’s paper is a summary of carefully made observations covering a considerable period, and he is thus able to affirm as a fact what seems to be more or less evident to even the superficial observer.

Dr. Palmer’s paper on the dangers attending the introduction of foreign animals and birds³ gives most timely advise on a subject that cannot be too seriously weighed in advance of action which, once taken, cannot be retrieved, as many communities have learned at sad cost. Several pages devoted to the general subject are followed by a condensed

¹ Economic Relations of Birds and their Food. By Prof. F. E. L. Beal, Department of Agriculture, Washington, D. C. Reprinted from the Proceedings of the Twenty-fourth Annual Meeting of the New Jersey State Horticultural Society, Jan. 4 and 5, 1899. 8vo, pp. 27.

² Birds as Weed Destroyers. By Sylvester D. Judd, Ph.D., Assistant in Biological Survey. Year-book of U. S. Department of Agriculture for 1898, pp. 221-232, pl. xiv, and text cuts.

³ The Danger of Introducing Noxious Animals and Birds. By T. S. Palmer, Assistant Chief of Biological Survey. Yearbook of U. S. Department of Agriculture for 1898, pp. 87-110, pl. viii, and text cuts.

statement of the history of the introduction, dispersal, and the results of the introduction of some ten species of mammals and seven species of birds into various countries to which they were not native. In nearly every case where the species has found permanent foothold in its new home it has become a pest, in some cases far greater than the evil its introduction was intended to remedy. Several species of Old World rats and mice have been unintentionally carried to nearly all parts of the world, and have thus become almost cosmopolitan pests, but while annoying, and under certain conditions very destructive, their ravages are easily borne in comparison with the losses due to the intentional introduction of the common rabbit of Europe into Australia and New Zealand, the Indian mongoose into Jamaica, and other islands in the West Indies, and into the Hawaiian Islands, and the introduction of ferrets, stoats and weasels into New Zealand to check the rabbit pest. Among birds, we have painful evidence of what may follow the thoughtless introduction of foreign species in that now well-nigh ubiquitous pest, the House Sparrow. Of the many attempts, or proposals to introduce other exotic species into this country the greater part have, fortunately, been attended with little success. The Starling has acquired a strong foothold in the vicinity of New York city, and thus far has apparently proved a well-behaved and attractive bird. It is rapidly increasing in numbers, and we have yet to see whether it will later become as obnoxious and unwelcome as it has under similar conditions in Australia and New Zealand, where "it has adopted a fruit diet to such an extent as to [have already] become a great pest."

Dr. Palmer discusses the proposed introduction of other species of birds to our fauna, and in the light of the past urges that "some restriction should be placed on the importation of birds and mammals which may become injurious." The introduction of European 'song-birds' into the United States has been attempted, with some degree of success, by individuals and by societies organized for this express purpose, but, as Dr. Palmer points out, "Experience with the English Sparrow, the work of rabbits in Australia and of the mongoose in Jamaica, all these have abundantly shown the necessity of preventing the repetition of similar costly blunders." Cape Colony and Western Australia, profiting by the experience of other countries, have already passed rigidly restrictive measures with this end in view, and it is to be hoped that similar legislation will be soon enacted by the United States, pursuant to the wise recommendation urged years ago by Dr. Merriam in his report to the department of Agriculture in 1886. Dr. Palmer in his 'summary,' concludes as follows: "(7) The introduction of exotic birds and mammals should be restricted by law and should be under the control of the United States Department of Agriculture."

Dr. Palmer's paper is a concise and effective presentation of the subject, and we are glad to see that it is gaining extended publicity by republication in full in various widely known and influential journals.—
J. A. A.

Nelson on the Birds of the Tres Marias.¹—As a result of his visit to the Tres Marias Islands in May, 1897, Mr. Nelson presents us with a comprehensive account of the islands, their birds and mammals, while the reptiles, crustacea, and plants collected by himself and his assistant, Mr. E. A. Goldman, are reported on, respectively, by Leonard Stejneger, Mary J. Rathbun, and J. N. Rose. Mr. Nelson also adds a Bibliography of the Tres Marias Islands.

The Tres Marias Islands are situated about 65 miles west of the port of San Blas. The group is composed of four islands which were evidently at one time connected with one another. The comparatively shallow sea between the islands and the mainland, and the close relationship existing between their fauna and flora and that of the mainland, apparently prove a former mainland connection.

In consequence of the isolation incident to their insular existence we should expect the animals of these islands to develop distinguishing characteristics of size or color, and Mr. Nelson shows that no less than 18 of the 59 land birds—11 of which have previously been described by him²—are separable from their mainland allies.

The 83 birds recorded from the islands are treated at length, and the extended and admirable notes on habits add to Mr. Nelson's already well established reputation as a keen and discriminating student of birds in nature. —F. M. C.

Nelson on New Birds from Northwestern Mexico.³—This paper is based on collections made by Mr. E. A. Goldman in southwestern Sonora for the Biological Survey of the U. S. Department of Agriculture. The species and subspecies described are the following: *Amazona albifrons saltuensis*, *Antrostomus goldmani*, *Aphelocoma grisea*, *Pipilo fuscus intermedius*, *Cardinalis cardinalis affinis*, *Cardinalis cardinalis sinaloensis*,⁴ *Arremonops superciliosa sinaloæ*, *Basileuterus rufifrons caudatus*, *Thryothorus felix pallidus*, *Heleodytes stridulus*, *Myadestes obscurus cinereus*, and *Catharus olivascens*.

Mr. Nelson calls attention to the suggestive fact that a number of the birds of southwestern Sonora show closer relationships to forms peculiar to the Cape St. Lucas region than to races of the same species in southern Arizona, a condition which, to some extent, is paralleled by that of certain of the birds of San Blas and the Tres Marias Islands. —F. M. C.

¹ Natural History of the Tres Marias Islands, Mexico. General Account of the Islands, with Reports on Mammals and Birds. By E. W. Nelson. North American Fauna, No. 14, pp. 7-62. Washington, Government Printing Office, 1899.

² Proc. Biol. Soc. Washington, XII, pp. 8-11, 1898.

³ Descriptions of New Birds from Northwestern Mexico. By E. W. Nelson, Proc. Biol. Soc. Washington, XIII, pp. 25-31, May 25, 1899.

Genera and Subgenera of the A. O. U. Check-List.—In the case of such purely conventional groups as genera and subgenera, utility is clearly their chief *raison d'être*, and this may be judged largely by the concensus of usage. In 1884, when the A. O. U. Committee prepared its Check-List of North American Birds, the feeling was more or less general among American ornithologists that there were too many genera current, and that the proper relationships of certain groups treated as genera were better expressed by reducing such groups to subgenera. This was evidently the feeling of the Committee, and on the conclusion of its work this feature of it was doubtless viewed with considerable satisfaction by all its members. As time passed on, however, the increasing tendency to differentiate subspecies on slight provocation naturally increased the relative value of the subgeneric groups. At the same time it became evident that the opinion of the Committee on genera and subgenera did not meet with the approval of ornithologists at large, and certain members of the Committee began to feel that the reduction of many 'genera' to the rank of 'subgenera' was illadvised. In 1892, this feeling was strong enough to lead to action, when all of the subgenera of *Trochilus* were given full generic rank, as was also *Ardetta* among the Herons. In 1896, a few other subgenera were similarly treated, while in 1898, no less than twelve subgenera were raised to the rank of full genera! Probably others would have received similar treatment had their status been formally challenged in such a way as to bring them up for action.

The matter has been recently considered by Dr. Coues, in 'The Osprey' for May, 1899,¹ where he claims that, in his judgment, "a large number of the subgenera now standing in the Check-List, require to be restored or advanced to full generic rank, and some additional subgenera need to be recognized." He gives a list of some 21 subgenera he believes should stand as genera, and some dozen subgenera are suggested as additions to the Check-List. Two new subgenera are proposed, namely *Pallasicarbo*, for *Phalacrocorax perspicillatus*, and *Psiloscoptes*, type *Scops flammeola* Kaup. Doubtless Dr. Coues's opinion on the subject of genera and subgenera, as here set forth, is shared by other members of the Committee.—J. A. A.

Publications Received.—Bangs, Outram. (1) A New Rail from southern California. (Proc. New Engl. Zoöl. Club, 1899, pp. 45, 46). (2) The Labrador Spruce Grouse. (*Ibid.*, pp. 47, 48.)

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¹On Certain Generic and Subgeneric Names in the A. O. U. Check-List. The Osprey, III, May, 1899, p. 144.

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CORRESPONDENCE.

The Spelling of Names.

EDITORS OF 'THE AUK':—

Dear Sirs:—In the April number of your excellent journal, our esteemed friend, Mr. William Brewster, has acknowledged—what I am sure no one would ever have dreamed charging him with—that he has experienced a difficulty in spelling correctly even so insignificant a word as a proper name, and in his strait he appeals to me for assistance. Now, although I am indicated, together with Mr. Brewster's fellow-committeeman, Dr. Coues, and the revered president of an ancient University, as one of those who does not know how to spell his own name, which is a very sad state of affairs indeed, yet I will try to explain why "these things are thus." It is possible Mr. Brewster's former intimate knowledge of philology (which he tells us, and he alone would say that, is now reduced to "simple ignorance") has been obliterated by the peculiar atmosphere which has enveloped him at the meetings of a prominent A. O. U. Committee, of which he is one of the most highly respected members. If he will permit me, I would recall to Mr. Brewster's memory the fact that in philological science a word is spelled according to the root or source from which it is derived, and it not infrequently happens that several words, although very differently spelled, have the same meaning. To give an instance of this effect of derivation, BREWSTER is always spelled

in the way just given, and why? Because all the Brewsters have the same origin or source, for the ancestor of every one who has borne that name, without a single exception, first appeared in the *Mayflower*.

With the name that has given our friend so much trouble, the case is slightly different, and those who bear it are all right, no matter under what guise of orthography they appear, even should it be the one assumed in Boston, for, having sprung from different roots or sources, in this respect unlike the Brewsters, all the spellings are perfectly correct, each after its own kind in strict accordance with philological rules. I trust the faded memories of student days, in spite of his occasional unphilological surroundings, will assert themselves in renewed force, and permit our esteemed friend to perceive and appreciate the clearness of the above explanation.

But I cannot close, Mr. Editor, without expressing my very great satisfaction at beholding so eminent a member of the A. O. U. Committee on Nomenclature a-gunning for blunders. May he continue his meritorious search, and may it be attended with more success than in this his first effort, and should he again desire my assistance, I could point him to a field near to his hand where, without stint, he could gather trophies worthy of his prowess.

D. G. ELLIOT.

NOTES AND NEWS.

JOSEPH WOLF, the eminent bird artist and animal painter, died on the 20th of last April at the age of 79 years. He was born at Moërtz, near Coblenz, Rhenish Prussia, in June, 1820; he was the son of a farmer, but his powers of observation and talents as a draughtsman soon attracted attention, and eventually won for him the reputation of being "the best all-round animal painter that ever lived." Says the London 'Field': "The first work which brought the artist's name prominently before the scientific world was Rüppell's 'Systematische Uebersicht der Vögel Nordost Afrika's,' published in 1845, in which some fifty African birds are depicted in attitudes which contrast strongly with the stiff and unnatural positions in which previous artists were wont to portray their subjects. We look upon these illustrations as instituting the *renaissance* period in ornithological drawing. In 1850 appeared Temminck and Schlegel's quarto volumes on the fauna of Japan, which, with Wolf's coloured plates, still constitute one of the best illustrated works on natural history. Quickly following this came Schlegel's grand 'Traité de Fauconnerie,' in folio, with life-size portraits by Wolf of all the Hawks employed by falconers.... The late G. R. Gray's standard work, in

three volumes quarto, on the 'Genera of Birds,' a copy of which cannot now be obtained under £30, was partly illustrated by Wolf. Those who are familiar with the magnificent folio works of Gould on the 'Birds of Asia' and the 'Birds of Great Britain' will recognize in many of the life-like coloured plates the handiwork and talent of Joseph Wolf; while the same remark will apply to Elliot's grand volumes, also in folio, on the Pheasants, Birds of Paradise, the Birds of North America, [the Pittidæ], and the Felidæ or Cat Family." For half a century the 'Proceedings' and 'Transactions' of the London Zoölogical Society "teemed with the life-like productions of his pencil," while in 'The Ibis,' from its beginning in 1859 till now, "we have another example of the artist's wondrous skill in the delineation of birds." Numerous separate works of travel and natural history have been illustrated by this great artist; "nor should we omit to notice his 'Life and Habits of Wild Animals,' which appeared in 1874, illustrated from his designs, engraved by Whymper, with descriptive letter-press by D. G. Elliot."

THE scientific expedition to Alaska, planned and equipped by Mr. Edward Harriman of New York, left Seattle May 31, in the steamer 'George W. Elder,' which had been completely refitted to meet the requirements of the expedition. The trip will include a visit to Annette Island, a short trip up the Stickeen River, and stops at Juneau, and other points on the way to Cook Inlet and Kadiak Island, which regions will be the principal fields of exploration. The object of the expedition is a careful study of the flora, fauna, geology and glaciers of Alaska. The party comprises a large number of eminent specialists in botany, zoölogy and geology, who have joined the expedition as guests of Mr. Harriman. These include, among ornithologists, Dr. C. Hart Merriam, Chief of the United States Biological Survey, who will have charge of the biological work; Dr. A. K. Fisher, of the U. S. Biological Survey; Robert Ridgway, of the U. S. National Museum; D. G. Elliot, of the Field Columbian Museum; Charles A. Keeler, Custodian of the Museum of the California Academy of Sciences; Dr. George Bird Grinnell, editor of 'Forest and Stream'; Mr. John Burroughs, and Mr. Louis Agassiz Fuertes. The opportunities thus afforded by the generosity of Mr. Harriman cannot fail to materially increase our knowledge of the natural history of Alaska.

MR. GEORGE K. CHERRIE has recently returned from his expedition to Venezuela, where he spent twenty-one months collecting for the Tring Museum. His field was the Valley of the Orinoco, from Ciudad Bolivar to the mouth of the Ventuari River, above the falls and beyond San Fernando de Atabapo. He devoted his time almost exclusively to birds, but collected some insects and small mammals. Many nests and sets of eggs were forwarded with the birds. He reports that collecting between Ciudad Bolivar and the first falls of the Orinoco was rather disappointing and monotonous; while individuals were abundant the species were sur-

prisingly few. Above the falls the fauna changed rapidly; the number of species increased, and with every move up the river new forms appeared. Flycatchers, Woodhewers, and Ant-thrushes were the dominant forms, while there was a striking scarcity of Hummingbirds. Mr. Cherrie's work was cut short by serious illness, which compelled his withdrawal from the country with his work only begun.

THE NEBRASKA ORNITHOLOGICAL CLUB was organized March 1, 1899, with eleven charter members, and Prof. Lawrence Bruner, Professor of Entomology and Ornithology, University of Nebraska, as President. The members are all active ornithologists; meetings are held every two weeks, at which the members report their observations. It is intended, through accession of members from other parts of the State, to make the Club eventually a State organization.

PART I of the 'Water Birds' of Mr. Charles B. Cory's 'Birds of Eastern North America' is in press and will soon be issued by the Field Columbian Museum. It is small quarto in size and profusely illustrated.

A COMPLETE 'List of the Birds of Rhode Island' is announced as in preparation, to be published by subscription in September, by Reginald Heber Howe, Jr., and Edward Sturtevant. The list is to be fully annotated, and illustrated by photographs, and will contain a bibliography of Rhode Island ornithology.

WE HAVE received a prospectus of what will apparently be a very important work, entitled 'Nests and Eggs of Australian Birds, including the Geographical Distribution of the Species and popular observations thereon,' by Archibald James Campbell of Melbourne. It will form a royal octavo volume of between 700 and 800 pages, with about 130 photographic reproductions of nests and nesting scenes, and 200 colored figures of eggs. Judging by the sample pages and illustrations accompanying the prospectus, the work will be unusually attractive and of standard value.

A FOUR-PAGE leaflet entitled 'Hints to Young Bird Students,' endorsed by eleven of the leading ornithologists of the United States, has been issued under the supervision of Mr. Witmer Stone. It points out that there is nothing to be gained by the collecting of large series of birds' eggs, "except the extermination of the birds." It counsels careful field work, and gives hints as to its prosecution. The large collections already available for study in museums, it is urged, "render it entirely unnecessary for every bird student to form a collection. Those who undertake any special line of study will soon learn what specimens are required and collect accordingly, instead of amassing a large number of specimens with no particular object in view." In the case of birds,

says the circular, "it is justifiable to shoot specimens which are new to you for purposes of identification, but you should make the best use of the bird *before* you kill it, so it will not be necessary to shoot more of the same kind in order to tell what they are." It is the aim of the circular to discourage the 'fad' of egg-collecting and its consequent waste of bird life, while still encouraging the study of birds.

A SOPHISM more or less current among advocates or abettors of indiscriminate bird destruction, either for millinery or other needless purposes, is perhaps too obviously disingenuous to require serious treatment, yet doubtless many thoughtless people are liable to mistake it for a sincere statement of fact, namely, that because millions of birds are reared annually for no other purpose than to have their necks wrung or their heads chopped off and their bodies used for food, or to be daily robbed of their eggs for man's use, therefore there is no reason why Egrets, Terns, Birds of Paradise, Tanagers, Warblers and other wild birds of fine plumage should not be killed without stint, or their nests robbed by the small boy and the commercial egg-collector. The whole tribe of barn-yard fowls is under man's protection, and reared for profit under artificial conditions, the supply being easily rendered equal to the demand, just as in the case of hay or grain or other farm products. Man's pecuniary interest is here involved in such a way that the extermination of a species is impossible. In the case of wild birds and beasts the case is wholly different. Here man interferes only as a destroyer, with the sad results we already too well know, whether we turn to the wild game animals and birds, or to the numerous victims of the milliner's greed. When free from man's interference nature maintains a fair equilibrium; the death rate, from normal causes, just about equalling, in the long run, the natural limit of reproduction. Hence when man interferes, and fashion claims certain species as her victims, a wholesale, senseless, indiscriminate slaughter supervenes, over and above the death rate nature is prepared to meet; and the small boy and the 'egg-hog' add their powerful aid, in the diminution of our insectivorous song birds, to the efforts of the 'plume hunter' in sweeping from the face of the earth some of the most graceful and beautiful forms of bird life, and which it is beyond man's power to replace.

Erratum.—In printing Dr. Thomas S. Roberts's article 'The Prothonotary or Golden Swamp Warbler (*Protonotaria citrea*) a Common Summer Resident in Southeastern Minnesota,' appearing in this number of "The Auk" (pp. 236-246) the name of the author was accidentally omitted, although duly given in the page-headings.



ROSE-BREASTED GROSBEAK.

A. Hoen & Co. Lithoacoustic, Baltimore.

UPPER FIGURE, IMMATURE MALE. LOWER FIGURE, ADULT MALE IN FALL.

3/4 NATURAL SIZE.